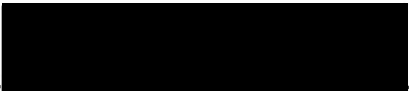THE RELATIONSHIP BETWEEN KNOWLEDGE AND

PSYCHOLOGICAL ADJUSTMENT OF THE

MYOCARDIAL INFARCTION PATIENT

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FIELD STUDY

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CHAPTER I

INTRODUCTION

Problem

A myocardial infarction invariably imposes a crisis
situation for the patient. The assault to the human
organism is psychological as well as physiological. The
physical condition of the patient prior to the myocardial
infarction and the severity of the subsequent attack places
constraints on both the rate and level of recovery of the
myocardial infarction patient. The level of recovery
achieved within these physical limits is influenced by
social, psychological and situational factors. Psycholo-
gical adjustment may be defined as the manner in which the
myocardial infarction patient perceives his illness and
correspondingly reacts to life as a cardiac (Rumbaugh,
1966). A large component of such psychological adjust-
ment for these patients is their attitude toward heart
disease.

It is suggested in the literature that one of the
factors related to attitude toward illness is the
affected person's general fund of illness-related inform-
ation. In the field of mental health, this relationship
has been studied quite extensively by Nunnally (1961).
Whether a relationship between attitudes and knowledge

also pertains in physical illness has not been reported in the literature. It is the major intent of this study to investigate this relationship, as it may apply to myocardial infarction patients in the early rehabilitative phase of recovery.

It is particularly relevant for the practice of nursing to study the relationship of knowledge and psychological adjustment. Nurses have become increasingly involved in all aspects of the rehabilitative care of myocardial infarction patients. Assisting the patient to adapt to the changes in his life style, which is altered as a result of heart disease, is a vital part of nursing care for the myocardial infarction patient. The nursing profession's response to the need for adaptation has focused on providing information which the patient can use to make decisions about changes in life style. This information-giving is aimed at acquisition and retention of appropriate factual knowledge, utilization of this knowledge in activities of everyday life and formulation of constructive attitudes toward illness (Redman, 1971). Of interest in the present study is the relationship between two of these variables: factual knowledge and attitudes toward illness.

Review of the Literature

What are the factors confronting a patient with a myocardial infarction that make psychological adjustment a problem? This question might be answered by evaluating the task that the patient faces in the recovery phase following a myocardial infarction. The patient, often previously healthy, is confronted with a confusing and life-threatening disruption of his established life style. The patient's accustomed life-style has been predicated upon certain physical capabilities. This predication may be no longer operative, demanding that the patient make major alterations and adjustments in his life. This calls for the need to provide opportunities for the patient to learn about available alternative courses of action that are in accord with his newly acquired physical limitations (Rumbaugh, 1966).

Patient reactions to this new learning task may vary. Some of the psychological responses to the crisis of heart disease which are discussed in the literature include the following: changes in mood such as depression, adoption of coping mechanisms such as denial, an altered state of perception of health, and a lowered self-esteem. The psychological adjustment of a patient following a myocardial infarction is influenced not only by his psychological response, but also by situational factors in the environment around him that have been altered by his cardiac

status. The problem becomes a larger one. The patient, significant others and the community all in some way influence the patient's response.

Mood changes, such as depression, have been discussed frequently as a response to a myocardial infarction. Bruhn, Chandler and Wolf (1969) examined depression as a response to a myocardial infarction and as a factor in survival. These investigators administered the Minnesota Multiphasic Personality Inventory (MMPI) at the entry into, and the end of a five year project to thirty post-myocardial infarction patients and thirty matched controls. They found that patients who died between the first and fifth annual examinations had scored significantly higher on the depression subscale at the time of entry into the project than did the surviving patients. At the end of the five year period, the MMPI depression subscales of the survivors showed more depression than at their admission to the study, approximating the level of the depression scale of the deceased patients. This correlation between chronic depression and nonsurvival was substantiated by Rodda, Muller and Bruhn (1971), who compared the results of the study group and the matched controls. Depression was more common among the patient group than among the matched controls. Chronic depression was more characteristic of individuals who subsequently experienced a heart attack and did not survive, than among those who

subsequently experienced a heart attack and did survive. The investigators concluded that depression may be an important indicator of impending demise among survivors of heart attacks.

The patient's perception of his health proved to be the strongest predictor of patient morale following a myocardial infarction in a study conducted by Garrity (1973). He identified the problems that confront the myocardial infarction patient to be similar, though extreme and telescoped, to the developmental tasks that a man faces as he ages and personnal health deteriorates. It was theorized that the patient's level of activity and social involvement would have the greatest effect on morale. Other factors examined were the patient's perception of his health status, the presence of chronic health problems and the severity of the heart attack. An association between social involvement and morale was found, but it appeared to be explained by the patient's perception of his health. Garrity reasoned that health perception and morale may be related to another yet unidentified third variable, which may be a stronger relationship than the two variables already mentioned.

Denial is a frequent response to a myocardial infarction. Gray, Reinhardt and Ward (1969) concluded that one reason cardiovascular patients are rehabilitated less frequently than other severely disabled persons is

that they are less willing or able to accept their impairment realistically. They further assumed that once a cardiovascular patient was helped to accept this impairment, he could be as successfully rehabilitated as non-cardiac patients. Acceptance of one's illness and a readiness to seek help, thus are key pre-requisites to successful rehabilitation. The authors collected data from two samples, a national sample and a community sample, both composed of severely disabled persons (cardiovascular and non-cardiovascular) receiving Social Security disability benefits. The national sample of 4463 was used as a control group, while the community sample was composed of 109 persons over 55 years of age who were encouraged to participate in a rehabilitation program. Only 33 percent of the cardiovascular patients participated in the rehabilitation program, compared to 57 percent of the other severely disabled persons. Initially the cardiovascular patients in the community sample viewed themselves as less sick than other severely disabled persons and expressed attitudes of passive hopelessness and resignation more frequently. After participating in the rehabilitation program, 81 percent of the cardiovascular patients returned to work as compared to 60 percent of the other severely disabled persons. The authors concluded that cardiovascular patients' rehabilitation rate could be comparable to other disabled persons if they were able

to accept their impairment enough to join such a program. Why cardiovascular patients are reluctant to join such a program was not determined.

Adsett and Bruhn (1968), conducted group sessions of male post myocardial infarction patients who were having difficulty adapting to their cardiac disability. These men all had high levels of drive and frustration, and lacked closely-knit and supportive familial relationships. The investigators found that the patients were predominately concerned about the changes that heart disease had necessitated in their life-styles, and were experiencing a lessening in their self-esteem.

Social and cultural standards may have a major influence upon the kinds of action which a heart patient may take in regard to his own health status. Croog (1968) conducted a comprehensive review of the literature dealing with the psychological and social factors involved in the recovery process of the heart patient. He found few studies that examine the manner in which these social and cultural factors operate influencing patient behavior and in affecting different levels of adjustment to coronary artery disease. One of the factors affecting the patient's perception of himself and his disease process most frequently identified in the literature was a vague and uncertain definition of the role to be assumed by the post myocardial infarction patient.

Current medical treatment emphasizes a return to as much of a normal role as possible following a myocardial infarction. There are unfortunately, poorly defined lay interpretations of appropriate kinds and amounts of activity for patients who have had a myocardial infarction (Monteiro, 1973). In the usual sick role, the ill person is conditionally exempt from his normal role responsibilities for a limited period of time. Then he is expected to have recovered and to resume his former roles. But resumption of the former role can be problematic following a myocardial infarction. In a study of 115 males who suffered myocardial infarctions in the previous six to twelve months, the respondents almost unanimously agreed that as a result of their myocardial infarctions, other people, mainly family and friends, expected them to restrict their activity indefinitely. Many of these patients believed that activity might precipitate another attack. Monteiro (1973) surveyed attitudes prevalent in the community regarding the amount of activity that the post myocardial infarction patient could resume. In a questionnaire to 1137 households in Rhode Island regarding the activity of post myocardial infarction patients, respondents in general tended to agree with statements that were liberal, rather than restrictive, but expected the cardiac to be cautious about pain and "overdoing it." The group who had a history of a myocardial infarction took the most

restrictive view about activity for the cardiac as compared
to either the group with no experience of heart disease
or those who knew someone with heart disease. This lack
of congruence in definition of the role expectations of
the post myocardial infarction patient creates much
confusion and anxiety for the patient, his family and
personnel involved in his care.

Klein (1965) noted an uncertainty on the part of the
physician to give definite instructions regarding activity
and employment. He assessed twenty post myocardial
infarction patients who exhibited a pattern of invalidism
out of proportion to the residual physiological impairment,
and the physicians who instructed these patients. Physicians'
directions were either overly restrictive or indefinite
concerning the level of activity possible for the patient.
In a similar study with 400 patients, Wynn (1967) noted
a similar failure to give adequate instruction. Wishnie
(1971), in a study of psychological distress during conva-
lescence after a myocardial infarction, infered that much
of the distress and conflicts regarding role clarification
could be prevented by better explanations of recommended
activity. This lack of a defined role may have explained
why Gray, Reinhardt and Ward (1969) discovered that
cardiac patients adopted a sick role and participated in
rehabilitation programs less frequently than did non-
cardiac patients. Lacking a specific definition of

appropriate sick role behavior and of expected activity level can cause conflicts in the patient's self-perception and his psychological adjustment.

Acknowledging the conflicts in patient's facing an adjustment after a myocardial infarction, health professionals are recognizing the importance of supplying information to aid the patient in making the transition to an altered life-style. A number of teaching programs have been designed and implemented to increase knowledge about their disease for post infarction patients (Dodge, 1969; Joseph, 1960; Hahn and Dolan, 1970; Firlit, 1968; Moss, 1970; and Wenger and Mount, 1974). The teaching programs followed one of two basic formats: a highly systematic course of instruction, or individualized instruction based upon needs expressed by the patient. Wenger and Mount, Firlit, Hahn and Moss designed in-hospital teaching programs including information about the nature of coronary artery disease and various aspects of the physical and psychological aspects of the medical regimen, such as activity, diet and stress. Joseph and Dodge based their teaching programs on specific concerns of the patient. A variety of subjective comments were reported regarding the teaching programs covering such areas as improved patient conditions as evaluated by physicians, reduced non-essential patient-physician contacts and favorable reactions to the programs by the

patients. No objective data regarding these programs and their effect on the patient or his post-hospital progress were collected. There was no attempt to determine what effect educating the patient about his disease process had upon his recovery from the myocardial infarction.

An experimental study involving 69 hospitalized cardiac patients (Nite and Willis, 1964) was conducted, in which the control group received traditional care and the experimental group a total patient care approach. A systematic teaching program was planned for each patient and his family in the experimental group based on needed behavior changes which were identified by the research group. In post-hospitalization evaluation, the measures of compliance to the medical regimen between the two groups did not differ significantly. Doubts were raised about the design of the study. The investigator reasoned that either the teaching program was not defined adequately enough or the data collecting measure of compliance did not differentiate adequately enough. Therefore, the results of the study remain inconclusive. Further work needs to be done.

Tyzenhouse (1973) was interested in the effect of the wife's knowledge about the patients disease process on the patient's recovery following a myocardial infarction. By interviewing the patient's wife, she made an estimate of the wife's knowledge about the physiological effects of the

infarction and the rationale behind the treatment program. None of the wives felt that they had influenced their husband's compliance to treatment. Tyzenhouse concluded that in order for the treatment program to be effective, the patient must be directly involved in planning and implementation.

Rheumatic heart disease and diabetes have characteristics similar to coronary artery disease: chronicity and a need for changes in the patient's life style. Both rheumatic heart disease and diabetes also require the patient to assume much of the responsibility for management of his disease. A similar degree of self-management is becoming necessary for coronary artery disease as preventive care, diet changes and activity programs are increasingly important. In reviewing the literature, useful information can be found in studies related to the disease processes of rheumatic heart disease and diabetes.

A study interested in the effect of patient instruction on utilization of prophylactic treatment in rheumatic heart disease was conducted by Heinzelmann (1962). Interviews were conducted with 284 college students with a history of rheumatic fever and/or rheumatic heart disease. While it is not valid to assume that all of the students had been instructed in rheumatic fever prophylaxis, only 19 percent were on some form of prophylactic treatment (usually penicillin) at the time of the interviews. During

the interview, the student completed a questionnaire containing three indices: a susceptibility index (susceptibility to recurrent attacks), a seriousness index (evaluating the impact of the attack on his life) and a knowledge index (knowledge regarding the cause, consequences of and means of preventing future attacks). The subjects responses to the questionnaire were correlated with whether they were taking prophylactic treatment. Persons receiving high scores on all three indices were more likely to be on prophylaxis than persons receiving low scores -- 51 percent of those who received high scores on all three indices were on prophylaxis, compared to four percent of those who received low scores on all three indices. They also found that persons with multiple attacks of rheumatic fever, especially within the past five years, and persons who had been hospitalized were more likely to be on prophylaxis. The impact of the individual factor of knowledge was not isolated. It is, therefore, impossible to determine if knowledge alone is significant, or if the combination of the three factors is significant.

A number of studies of diabetic patients have been conducted to measure the relationship between patient level of knowledge and incidence of complications. In a study of diabetic control, (Williams, 1967) knowledge of diabetes was negatively correlated with control. Patients who knew more about diabetes were in poorer control.

Watkins (1967) made a further analysis of the relationships
among the three factors of knowledge, control and manage-
ment of the disease (as carried out by the patient in
such areas as diet, foot care, urine testing, etc.). The
investigator found that those who knew more about the
disease managed their regimen better. No relationship
was found between management and control, but those in
poorer control knew more about the disease. These two
studies raise the possibility of two lines of reasoning to
account for the results:

1. Good control is possible without knowledge of the
disease process and its treatment.

2. Patients who have had more complications have more
knowledge because they have dealt with the factors of
their disease as a result of the complications.

In contrast to Williams and Watkins, Holecek (1971)
demonstrated that generally diabetic patients with higher
scores on their knowledge test manifested fewer complica-
tions. The duration of the disease, however, was the
single greatest predictor of complications. Incidence of
complications increased as the duration of the disease
increased. It was felt that this was probably due
to physiological changes which occur as the disease
progresses.

Bowen, Rich and Schlotfelt (1961) utilized experi-
mental and control groups in which the experimental group

was given an intervening organized program of instruction
between the pre and post tests. Patients in the experi-
mental group demonstrated a significantly greater gain in
knowledge about their disease and a gain in skill in
carrying out their treatment, e.g., self-administration of
insulin. There was no significant difference in their
attitudes or in clinical manifestations of their disease
as compared to the control group. This reinforced Watkins
results -- that management and knowledge were related, but
neither variable influenced control.

To summarize, the investigators examining the effects
of patient knowledge on management of diabetes and
rheumatic heart disease revealed a variety of conclusions:
The combinations of patient's perceptions of the disease
as serious, patient's perception of his susceptibility
to future attacks and patient knowledge were positive
factors influencing his participation in prophylactic
treatment for rheumatic heart disease. It was not
determined whether it was the combination of the three
factors, or one of the factors that was most significant.
The effect of patient knowledge on diabetic control showed
mixed results. Although knowledge could help the patient
better manage his disease, frequency of complications
increased as the duration of the disease increased. In
applying the results of these studies to coronary artery
disease, one might wonder whether patient knowledge might

increase the patient's ability to manage his disease, but may not alter future complications.

The post myocardial infarction patient must adjust to an altered life-style within the community. The general level of health knowledge held within the community regarding coronary artery disease was then of interest. The literature contained few studies examining the level of knowledge about coronary artery disease commonly held in the community. As has previously been mentioned, Monteiro (1973) found that both the patient and the community were quite limited in the amount of knowledge they possessed. This was reflected in the lack of a defined role for the post myocardial infarction patient.

Knowledge of common diseases as held by the community is quite limited, often more limited than physicians thought it should be. Four groups, with a combined total subject population of 564 (Samora, Saunders and Larson, 1962) were tested with a multiple choice questionnaire designed to measure knowledge about a number of relatively common diseases. It was found that persons who had suffered from a given disease tended to be mor accurate in answering the questions, than the group as a whole. However, it was found that the level of knowledge was quite low in the sample. The authors concluded that the level of general health knowledge was sufficiently low to be a potential barrier to doctor-patient communication. No evidence,

however, was presented to show health knowledge necessary
to doctor-patient communication. As part of the same
study, (Pratt, Seligman and Reader, 1957) physicians in
the same clinic setting were asked to evaluate the level
of information they thought laymen should have. The
physicians reported that 82 percent of the facts in the
questionnaire should be known by laymen, while only 55
percent of the questions were answered by the sample
population. This discrepancy between what the physicians
think patients should know and what patients actually do
know, may be a potential basis for the ineffectiveness in
doctor-patient communication.

A fairly large scale study was done by Tagliacozzo
and Ima (1970) to determine the relationship between
health knowledge and clinic attendance. A group of 159
Negro patients in an out patient clinic in Chicago was
observed over a fifteen month period. At the beginning of
this period, a knowledge test was given which focused
on four diseases: hypertension, arthritis, diabetes and
cancer. Knowledge of the illnesses and attendance behavior
were positively correlated. Knowledge also continued to
predict clinic attendance when education and age were
controlled for statistically.

The literature was also surveyed to determine the
presence of factors influencing the amount of knowledge
possessed by a person. Tagliacozzo and Ima (1970) found a

positive correlation between education and level of knowledge.
In separate studies, Levine (1962) and Lewis (1962) examined the interrelationship of knowledge and anxiety or
fear. Levine's study showed a consistent relationship
between education and apprehension. The better educated
were the least fearful of the diseases mentioned. Those
who knew a victim of the disease were more likely to fear
it. Lewis interviewed 104 mothers of children ill with
poliomyelitis, measles, viral pneumonia and tuberculosis
within the previous year. The study concluded that the
critical factors in influencing this study group to act
irrationally were a perception of a situation as dangerous
and a lack of knowledge. Irrational vehavior was defined
as the use of charms, herbs, health foods, religious
practices, etc., for the treatment of illness.

In summary, assessments of community knowledge levels
of a variety of disease entities indicated that the lay
population knew less than the medical profession had
assumed. The investigators also observed that as knowledge
of a disease process increased, anxiety decreased and
utilization of medical facilities increased.

Rumbaugh (1966) explored the concept of psychological
adjustment in the recovery phase of heart disease. He
found that how a cardiac patient viewed his disability
was frequently a requisite for successful rehabilitation;
and consequently evaluated a patient's attitudes toward

himself and toward his heart disease as a measure of rehabilitation potential. Rumbaugh's work, however, was not concerned with factors such as patient knowledge of disease processes, that might influence the patient's attitudes.

The relationship of attitudes and knowledge have been examined in the field of mental health more than in the field of physical health or illness. Nunnally (1961) conducted an extensive series of research studies concerning public reactions to and knowledge of mental illness. His research plan was to study popular concepts of mental illness and the manner in which these concepts develop and change, both naturally and as a function of outside influences. Nunnally found that his public had little information, either correct or incorrect, about mental health problems. There was also a high level of anxiety and limited opportunities to learn about mental health. At the beginning of the study, attitudes of the sample groups toward mental illness were primarily negative. Nunnally found that these previously negative attitudes could be changed by information-giving programs. Even in informational programs involving a single presentation, attitudes were consistently changed in a positive direction.

What then is the effect that a patient's fund of knowledge has upon his adjustment following a myocardial infarction? No studies were found in the literature that directly answer this question. Croog (1968) conducted a

comprehensive review of the literature dealing with the psychological and social factors involved in the recovery process of the heart patient. He found that much work has been done on epidemiology and on the treatment phases of heart disease, but little on the rehabilitation aspect. Much of this literature has centered on reporting types of medical therapy and rehabilitation which appears to be effective in management of the disease. Little of the literature has involved controlled studies testing the relationship of specific psychological and sociological variables to the long-term rehabilitation of the coronary artery patient. Croog, for instance, believed that the manner in which the patient perceives his illness and his attitudes toward his disease and toward his medical care may help determine his compliance with his medical regimen and his mood level, but he found few studies in this area of concern that were conducted during the recovery phase of heart disease.

Rumbaugh's conclusion that psychological adjustment in cardiac disease is dependent upon one's attitudes and Nunnally's study that shows the effect of knowledge upon attitudes in mental illness, suggests that there may be a relationship between the knowledge that a person possesses about the disease and his attitudes toward his coronary artery disease. The investigator was interested in examining this relationship.

Since few studies have been conducted to determine the relationship between knowledge of the disease related information and psychological adjustment after a myocardial infarction, little aid was found from studies in the literature to determine what demographic factors should be significant in this study. Illnesses other than heart disease and previous hospitalizations were ascertained by the investigator to determine presence of any other chronic disease. Length of hospitalization was determined by the investigator to estimate the severity of the myocardial infarction and the incidence of complications following the initial attack. The only factor that has been shown to be statistically significant to the level of knowledge in other disease processes is that of level of education (King, 1968; Samora, Saunders and Lasson, 1962; and Dodge, 1969). And further, socio-economic factors have not been shown to be significant once education has been removed as a factor. Level of knowledge about the particular disease process also increased if one had the disease or knew someone who did (Seligman, McGrath and Pratt, 1957).

Purpose

The primary purpose of this study is to examine the relationship between the post myocardial infarction patient's level of knowledge about the disease and his psychological adjustment. The secondary purpose is to examine the effect of the following factors on both the patient's level of knowledge and his psychological adjustment: age, ethnic group, religion, education, occupation, length of hospitalization, illnesses other than heart disease, previous hospitalizations and time interval between admission to the hospital and the interview for this study.

CHAPTER II

METHODOLOGY

This is a descriptive study of 16 post myocardial infarction patients. Subjects were selected from those patients who had been admitted to Coronary Care Units in four community hospitals from 3 to 12 months prior to conducting the interviews. A minimum of 3 months was considered necessary for initial recovery from a sudden, acute illness.

Subjects

Post myocardial infarction patients who had met the following criteria were asked to participate in the study:

1. Experienced a first myocardial infarction at least 3 months and no more than 12 months prior to the time of the study.

2. Treated in the Coronary Care Unit of one of the four designated community hospitals.

3. Were 59 years of age or less.

4. Were of the male sex.

Of the 24 patients who met the above criteria, 16 participated in the study. Eight patients who were eligible for the study did not participate for the following reasons: three failed to reply to communication from the investigator

and five indicated they did not wish to participate in the study. (Location of these subjects by hospital may be seen in Table 1.)

Table 1

Number of Patients Contacted and Actual Respondents

| | Hospital | | | |
Subjects	A	B	C	D
Patients contacted	11	2	7	4
Results from Contacts				
No reply	2	0	0	1
Refusal	2	1	1	1
Consent	7	1	6	2

The Coronary Care logs from four large metropolitan general hospitals were scrutinized to locate subjects meeting the designated criteria. All hospitals had modern coronary care units. As a part of their proceedures, they had kept a log listing the patients who had been admitted over the past year. Any necessary additional information required for this study was elicited from the admitting and/ or medical records department. At this point, 60 patients were found who met the criteria of the study. Letters requesting permission to interview the 60 subjects were sent to the 36 physicians caring for them. (See Appendix A)

In hospitals A and B, the criterion of the first myocardial infarction was not ascertained, as medical records were inaccessible. Therefore, letters were sent to physicians of potential patients at these two hospitals asking if these patients met the criteria of the study, and requesting permission to contact the patient for the study. Of the 36 physicians contacted from the four hospitals, nine did not respond. Eleven of the original 60 potential subjects were therefore lost to the study. An additional 21 of the patients did not meet the criterion of the first myocardial infarction. Two physicians refused the investigator permission to contact their patients, resulting in a loss of another three potential subjects. An additional reply was received from a physician after completion of the data collecting period, resulting in the loss of one subject.

After receiving the physician's permission, letters were sent to the 25 potential subjects requesting them to participate in the study. (See Appendix A) It was indicated to them that their physician had given his permission for the interview, and requested times when the subject would be available for the interview. (See Table 1) Subjects who did not reply, were contacted by telephone to obtain their permission and convenient interview times.

Data Collecting Instruments

None of the community hospitals used to develop the sample group has a defined teaching program for patients with myocardial infarctions. In each, teaching was conducted in an informal nonspecific manner. In general, pamphlets and brochures from the Oregon Heart Association were made available. Many of the patients received dietary instructions from the dietician before leaving the hospital.

In preparing the questionnaire to test the level of knowledge regarding myocardial infarctions of the patient sample, the investigator incorporated information contained in brochures and pamphlets obtained from the Oregon Heart Association. Factors from these pamphlets involving attitudes and feelings were not included, since the investigator was interested in tapping the cognitive, rather than the affective aspect. The questionnaire was also presented to the graduate student seminar in which it was reviewed by a group of master nursing students to determine the validity of the test items.

The questionnaire is divided into four subsections: etiology and symptoms (items 1, 2, 3, 4, 29, and 30); activity (items 6, 7, 8, 17, 26, and 27); risk factors (items 5, 13, 14, 15, 20, 21, 23, 24, 25) and diet (items 9, 10, 11, 12, 16, 18, 19, 22, and 28). The questionnaire items contained a varying number of alternative responses.

The number of possible points for the various subsections are: etiology and symptoms -- 15, activity -- 14, risk factors -- 17, and diet -- 28. Because the investigator believed each subsection to be of equal importance, diet items were given one point per alternative, while the items in the remaining subsections were given two points per alternative. Each alternative to the multiple choice stems was regarded separately and accorded the assigned points if the subject indicates a correct response. The highest possible score was 120. See Appendix B for the questionnaire. No attempt was made to ascertain the source of the subjects information about heart disease, as this was considered to be outside the scope of this study.

The Cardiac Adjustment Scale was developed by Rumbaugh (1964) specifically for the psychological assessment of heart patients as it related to their rehabilitation potential. The scale was formulated on the basis of opinions, activities and attitudes frequently stated by heart patients. These statements were then evaluated by a team of expert psychologists and physicians, and assigned to categories according to how positively or negatively they were viewed in relation to the heart patient's welfare. Reliability of the total scale is high -- $r=.94$ (Rumbaugh, 1966). The validity of the Cardiac Adjustment Scale as a vocational predictor was evaluated using a group of 79 patients who were followed over a three year period.

Statistical analysis revealed that there were significant differences between the Cardiac Adjustment Score means for the following groups: gainfully employed at least half of the time, unemployed and deceased. (F=6.97, p<.01) See Appendix C for the Cardiac Adjustment Scale.

Since few studies have been conducted to determine the relationship between knowledge of the disease process and psychological adjustment after a myocardial infarction, little was found in the literature to deter- mine what identification information should be significant in this study. The factor of age was controlled for its effects on the major variables of the study by including only those under 59. For purposes of analysis, age was subdivided into five age groups. The factor of sex was excluded as a variable since only males were included. The variable of chronicity was controlled by including only subjects following their first myocardial infarction. Previous hospitalizations were ascertained to determine presence of other disease factors. (The patient identification form is included in Appendix D.) Education has been shown to be the only factor statisti- cally significant to the level of knowledge of other disease processes (King, 1968; Samora, Saunders, and Lasson, 1962; and Dodge, 1969). In these studies, socioeconomic factors have not been shown to be significant once education has been removed as a factor. Level of knowledge

about a particular disease process also increased if one had the disease or knew someone who did (Seligman, McGrath and Pratt, 1967).

Proceedure

All subjects who agreed to participate were contacted by telephone to arrange for the interview. Of the 16 interviewed, 13 interviews were conducted in the subject's home, one in the investigator's home and two in the subject's place of business. Both the questionnaire and the Cardiac Adjustment Scale were administered to the subject during the same visit. The directions included with both data collecting instruments were reviewed with each subject. Any questions the subject had about specific items or about coronary disease in general were deferred until the questionnaire and the Cardiac Adjustment Scale were completed. The amount of time required by the subjects to complete the demographic information sheet, the questionnaire and the Cardiac Adjustment Scale varied from 30 to 50 minutes.

As the purpose of the study was to determine the relationship between the level of knowledge about heart disease of the post myocardial infarction patient, and his psychological adjustment, the scores of the knowledge test and the Cardiac Adjustment Scale were tested for significant relationships. The subsections of the questionnaire

were also compared with the total score on the Cardiac Adjustment Scale.

CHAPTER III
RESULTS

The results of the study begins with a description
of the population sample. This is followed by the analysis
of the primary variables of the study: the patient's
knowledge about coronary artery disease and the patient's
psychological adjustment. Finally, an analysis of the
effect of various demographic factors on either of the
primary variables of the study is presented.

Sixteen male post myocardial infarction patients were
interviewed, ranging in age from 37 to 59 years, with a
mean age of 51.94 years and a standard deviation of 5.33.
(See Table 2.) They were all married and living with
their wives.

By coincidence, all were Caucasian, however, no
attempt was made by the investigator to limit the sample
to one ethnic group. Although the hospitals involved
treated a wide range of ethnic groups, no patients in any
other ethnic groups were found that met the criteria for
the study. Eleven of the respondents were Protestants,
one each was Roman Catholic and Morman, and three
expressed no religious preference. The majority of the
had graduated from high school, however, all had at
least attended high school which should indicate a reading

level sufficiently advanced to deal with the data collecting
instruments. (See Table 3) Thirteen of the respondents

Table 2

Frequency Distribution of Respondents by Age

Age Range	N
Below 40	1
40-44	0
45-49	4
50-54	5
55-59	6
Total	16

were employed at the time of the interview. Participant's
occupations were classified according to the classification
system of the U.S. Bureau of Labor. (See Table 4) Three
of the respondents were medically retired prior to their
myocardial infarction; one each for the following
reasons: a back injury caused by an industrial accident,
long standing angina and peripheral vascular disease.

To determine the general health status of the subjects,
the investigator reviewed the patient's history of
illnesses and previous hospitalizations for non-cardiac
problems. This was the first myocardial infarction for all
of the respondents. Nine of the respondents indicated

Table 3

Frequency Distribution of Respondents
By Educational Preparation

Highest Educational Preparation	N
Attended High School	6
Completed High School	3
Attended Vocational School after High School	1
Attended College	3
Completed College	3
Total	16

Table 4

Frequency Distribution of Employment
Classification of Respondents

Employment Classification*	N
Professional Persons	2
Proprietors	1
Managers	3
Foremen	3
Skilled Workers	4
Medically Retired	3
Total	16

*U.S. Bureau of Labor Work Classification System

no illnesses other than heart disease. The other seven
respondents each listed another illness in addition to
heart disease for which they were being treated. These
were the following: a back injury, ulcers, hypothyroidism,
asthma, arthritis, eczema and peripheral vascular disease.
Ten indicated that they had not been previously hospita-
lized within the past ten years. Three of the other six
patients had been hospitalized for back injuries, another
for an appendectomy and a skin graft; one patient for
nose, foot and prostate operations and the remaining patient
had been hospitalized for angina.

The length of the hospitalization period for treatment
of the myocardial infarctions ranged from two weeks to more
than one month. (See Table 5) The majority of the patients
were hospitalized for either two weeks or three weeks,
indicating that the majority of the patients had
uncomplicated myocardial infarctions.

The patient's knowledge level was operationally
defined as the score on the questionnaire prepared by the
investigator; and the patient's psychological adjustment
has been operationally defined as the score on the Cardiac
Adjustment Scale. The relationship between these two
scales was examined. A Pearson's Product Moment correlation,
utilizing the subject's scores on the two scales, yielded
a correlation index of 0.1, indicating no significant
relationship existing between these two factors. The

Table 5

Frequency Distribution of Length of
Hospitalization of Respondents

Length of Hospitalization	N
2 weeks	6
3 weeks	6
4 weeks	2
More than 4 weeks	2
Total	16

range of scores for the Cardiac Adjustment Scale was 107
to 143, with a mean of 132.75, a median of 135.5 and a
standard deviation of 8.4. The mean and standard deviation
for the knowledge questionnaire are included in Table 6.

Table 6

Means and Standard Deviations for
Knowledge Questionnaire

	$\overline{X}$	s.d.
Total Questionnaire	101.25(120)*	7.6
Subscales		
Etiology and Symptoms	26.5 (30)	2.4
Activity	21.6 (28)	3.6
Risk Factors	30.6 (34)	2.0
Diet	22.5 (28)	4.4

*Possible Score in Parenthesis

It was of interest to look at the relationship that might exist between the Cardiac Adjustment Scale and the subscales of the knowledge questionnaire. A Pearson Product Moment Correlation was then computed between the Cardiac Adjustment Scale scores and each of the four subscales of the questionnaire. The subscale of etiology and symptoms and the Cardiac Adjustment Scale scores yielded a correlation coefficient of .36; the activity subscale and the Cardiac Adjustment Scale a correlation coerficient of .39; the risk factors subscale and the Cardiac Adjustment Scale a correlation coefficient of .04; and the diet subscale and the Cardiac Adjustment Scale a correlation coefficient of .09. None of the relationships were statistically significant. (With an N of 16, a correlation coefficient of .468 is needed to indicate statistical significance at the .05 level.)

Since the majority of the patients had been treated at two of the hospitals, it was possible to compare the data from these two hospitals for any systematic effect as a function of the institutional setting. There were seven subjects from Hospital A and six from Hospital C. The mean score of the subjects from Hospital A on the questionnaire was 100.57 and on the Cardiac Adjustment Scale was 135.85. The mean score of the subjects from Hospital C on the questionnaire was 101.33 and on the Cardiac Adjustment Scale was 134.66. Chi Squares computed

on the questionnaire scores and on the Cardiac Adjustment
Scale scores of the two hospitals showed no significant
differences between the two groups, indicating that the
hospital in which the patient had been treated should not
have influenced the results of the study.

The influence of various demographic factors on the
Cardiac Adjustment Scale and on the questionnaire was
evaluated. To examine the effect of age on the variable of
the study, the subjects had been divided into five age
ranges. The five groups were then combined into three
more equal groups: 49 and under, 50 through 54, and 55
through 59. There were five subjects in the 49 and under
age range, five subjects in the 50 through 54 age range and
six in the 55 through 59 age range. (See Table 2) The
mean scores of the three age groups on the Cardiac
Adjustment Scale were 131.8, 134 and 132.5 respectively.
As can be seen, the highest mean score (better adjustment)
was in the 50 through 54 age range.

The next variable examined was the number of months
that had elapsed between the subjects admission to the
hospital for his myocardial infarction and the interview
date. The time range was three to eleven months. For
purposes of analysis, the investigator utilized the Fisher
Exact Probability Test using the median score for the
Cardiac Adjustment Scale (135.5) and the questionnaire
(100.5); and the median number of months since admission

(7.5). With this division, there were eight subjects in each subsection. Among those subjects who had been admitted to the hospital less than 7.5 months prior to the interview, six scored above and two below the median on the questionnaire, while on the Cardiac Adjustment Scale, three had scored above and five below the median. Those who were admitted over 7.5 months prior to the interview, two scored above and six below the median on the questionnaire, while on the Cardiac Adjustment Scale, five scored above and three below the median. The above data suggests that those who had more recently been admitted knew more about their disease, but had lower adjustment scores, while the exact reverse was true of those admitted more than 7.5 months previously. The Fisher Exact Probability Test (Siegel, 1966), however, failed to show significant differences at the 0.5 level for either data collecting instrument. This in large part might be accounted for by the small sample obtained in which a few atypical scores impose more influence than in a larger sample.

To examine the variable of education, the sample was divided into two subsamples: high school graduates or less (N=9) and those who had attended and/or completed college (N=7). The subjects in the two groups were then divided into those who had scores above and those who had scores below the median on the Cardiac Adjustment Scale and on the questionnaire. (See Table 7 and 8) The Fisher

Exact Probability test showed a significant difference between those two groups on the questionnaire at the .05 level. Those with a higher educational level scored higher on the questionnaire designed to measure their level of knowledge about their disease process. There was no significant difference between the two groups using the Fisher Exact Probability Test on the scores of the Cardiac Adjustment Scale. Table 8 seems to indicate that those with a lower educational level scored higher on the Cardiac Adjustment Scale.

The data were examined to see if the factors (education and time lapse between admission to the hospital and the interview) were similar for the same subgroup. The data were examined to determine which subjects were contributing to which relationship. Only four subjects were in the category of having been admitted to the hospital seven or fewer months prior to the interview and having an educational level of high school or less. Three subjects are in the category of having been admitted to the hospital over seven months prior to the interview and who also had an educational level of having attended college. Five subjects admitted over seven months prior to the interview with an educational level of high school graduation or less while four subjects had been admitted seven or fewer months prior to the interview and had educational levels past high school.

Table 7

Number of Scores on the Questionnaire According
to Educational Level

	Above Median	Below Median
High School Graduate or less	2	7
Attended and/or completed College	6	1

Table 8

Number of Scores on the Cardiac Adjustment Scale
According to Educational Level

	Above Median	Below Median
High School Graduate or less	6	3
Attended and/or completed College	2	5

There was also no relationship between the variable
of the presence of other illnesses on either the
questionnaire or the Cardiac Adjustment Scale. The Fisher
Exact Probability test examining the variable of previous
hospitalization was not significant for the questionnaire.
Of the subjects who had been previously hospitalized,
seven scored above the median and only three scored below
the median. The trend, therefore, indicates that those who

had been admitted previously to a hospital knew less than those who had not previously been hospitalized. The scores on the Cardiac Adjustment Scale were quite evenly divided. Of those subjects who had previously been hospitalized four scored above and two below the median. Of those subjects who had not previously been hospitalized, four scored above and six below the median.

CHAPTER IV

DISCUSSION

The study failed to validate the presence of a
relationship between the variables of knowledge about the
management of the disease process and psychological adjust-
ment of patients with a recent initial myocardial infarction.
This is in contrast to the relationship between knowledge
and attitudes described by Nunnally (1961). Nunnally
studied knowledge of and attitudes toward mental illness
held by the general public and found that as knowledge
increased, attitudes improved. Nunnally's sample, however,
consisted of members of the community who were not directly
involved with mental illness. The present study interviewed
patients who did have a myocardial infarction and were more
personally involved. Having the disease may be the
factor that influenced the results.

The correlation between education and level of knowledge
found in the literature (King, 1968; Samora, Saunders and
Lasson, 1962; and Dodge, 1969) was substantiated by the
present study. Those subjects who had attended and/or
completed college scored significantly higher on the
knowledge questionnaire than did subjects who were high
school graduates or less.

Although few definite conclusions supported by

statistical analysis could be reached, a number of trends could be seen developing. The subscales of etiology and symptoms and that of activity had higher correlation coefficients with the Cardiac Adjustment Scale than did either the subscales, risk factors or diet. Since all of the subjects lived with their wives, they probably had little direct responsibility in planning their diet. In American society, the traditional wife's role includes planning and preparing the family meals. An inspection of the data revealed that the range of scores for the risk subscale was quite limited. All the subjects received high scores; therefore, this subscale did not discriminate sufficiently to indicate the presence or abscence of any relationship.

It was noted that there were differences in the Cardiac Adjustment Scale scores between the present study sample and Rumbaugh's sample. The age range of the subjects included in the present study was 37 to 59 years, with a mean age of 51.94 years and a standard deviation of 5.33. This is a somewhat older group than Rumbaugh studied. The mean age of his total group was 48.27 years with a standard deviation of 9.94. His working group had a mean age of 44.28 years and a standard deviation of 9.58. His non-working group had a mean age of 54.6 years with a standard deviation of 7.87. The smaller standard deviation of the present group could again be explained

by a limited N, a limited age range or a combination of both factors. There is no information available concerning the age range of Rumbaugh's sample. The mean Cardiac Adjustment Scale score of Rumbaugh's total group was 126.37 with a standard deviation of 14.97. He subdivided his group into working, non-working and deceased. The mean scores and standard deviations for these groups were: working, mean score of 131.6 and a standard deviation of 13.63; non-working, mean scores of 121.3 and a standard deviation of 16.26; and deceased, mean score of 117.5 and a standard deviation of 14.97. The mean score and standard deviation of the present study (132.7 and 8.4) most closely approximates the data from Rumbaugh's working group. Because most subjects in the present study were employed, this is a reasonable result. The standard deviaion of Rumbaugh's working group is higher (13.63) than the present study (8.4). The lower standard deviation may indicate a limited sample number and a more homogenous group. The major differences between Rumbaugh's sample and the present study sample are that the present study sample is older, is either presently employed, has plans to return to work or was medically retired prior to the myocardial infarction. This would indicate that the present sample is similar to Rumbaugh's larger, working sample.

The variable, number of months since admission to the

hospital, related in an interesting manner to both of the major variables of the study, knowledge and psychological adjustment. Level of knowledge seemed to be higher within the first seven months after the hospitalization period. The immediacy of the crisis situation may be a factor in one's motivation to learn about the disease related information. The patient is required to make abrupt, often major changes in his life style. As time goes on, some of the restrictions may ease and the patient may become more relaxed. An initial search for information about the disease affecting the person was somewhat supported by Robinson (1972) who found that the amount of information desired by the pre-operative patient was significantly related to the number of days between admission to the hospital and the interview. The longer patients were hospitalized, the less information was desired. The trend toward an inverse relationship seemed to exist between number of months following hospital admission and the Cardiac Adjustment Scale scores. After the median number of months (7.5), scores on the Cardiac Adjustment Scale increased. Bruhn, Chandler and Wolf (1969) found that the presence of depression and nonsurvival were correlated. The present study involves a cross-sectional rather than a longitudinal sample. The subjects in the sample who were interviewed beyond the median of 7.5 months after admission, therefore, may

represent a group who were sufficiently psychologically adjusted to survive. This group may represent a different population than those interviewed before the median of 7.5 months after admission to the hospital.

Another trend that seems to deserve further study, though beyond the scope of the present study, is the level of knowledge about the disease and any previous hospitalization. The present study seems to indicate a relationship between these variables. It was found that most subjects who had high scores (above the median) were those who had not been previously hospitalized. The possibility that this group might be even more motivated to learn exists, because they are faced not only with a life-threatening crisis, but with a new and unfamiliar environment as well. Haferkorn (1971) defined readiness to learn as a combination of motivation, past knowledge and experiences, and the ability to perceive his environment. Alterations in any of these factors could increase or decrease the patient's desire for information.

Poorly defined role expectations and consequent increased anxiety levels for the post myocardial infarction patients were frequently described in the literature (Monteiro, 1973; Klein, 1965; Wyn, 1967 and Wishnie, 1971). This variable did not seem to present a problem for the study sample. Thirteen subjects had either returned to work, or planned to do so in the near future. Their roles

had not changed. They were all returning to their previous jobs. The subjects who were to remain unemployed had been previously medically retired for reasons other than coronary artery disease. The subjects also had relatively short (two to three week) periods of hospitalization which would indicate non-complicated myocardial infarctions.

An unmeasured environmental variable that may have confounded the results of the study was a series of television programs, concerning coronary artery disease that was presented during the data collecting period. The series consisted of five documentaries presented during prime-time on Sunday evenings. The investigator would not have been aware of the programs had it not been for one of the subjects describing them to her. Since the investigator had not viewed the programs, she was not aware of the scope of the content. It was also not ascertained which of the subjects had viewed any or all of the programs. Nunnally (1961) found that information gained through one presentation was capable of changing attitudes toward mental illness. It is reasonable to assume that watching even one program may have changed responses to the Cardiac Adjustment Scale and/or the knowledge questionnaire of the subjects affected, especially considering the concurrence of the time of this study and the time of the television programs.

The results may also have been influenced by limitations

of the data-collecting instruments. The measurement of adjustment was limited only to the Cardiac Adjustment Scale and did not receive input from any other source (e.g. family or physician). The study may have left untapped some important adjustment factors. In constructing the knowledge questionnaire, the investigator was aware that it was too short to be considered comprehensive, but felt that it was of appropriate length for a convalescent patient to physically attend to the task of completing the data collecting instruments. The items on the questionnaire might have been more discriminating if they had been more complex. The subjects appeared to experience little difficulty in answering the majority of the items. The items seemed to be clustered more at the less complicated end of the continuum. The subject group was also quite homogenous in relation to educational level. One of the hospitals was chosen because it cared for patients with a variety of socio-economic factors. However, all patients who participated in this study were still middle class and Caucasian.

The correlation between education and knowledge was the only significant finding. There were trends noted in other relationships. Since little is known in the field of rehabilitation after a myocardial infarction, many of these trends deserve further study.

Higher knowledge levels soon after a myocardial

infarction may indicate that information giving programs of instruction might be most effective during this time period. As nursing has become involved in such information giving programs, the most effective time period for learning is especially relevant for the nursing profession.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This was a descriptive study of 16 male, post myocardial infarction patients, age 59 or less. Subjects were selected from those patients who had been admitted to Coronary Care Units in four community hospitals from 3 to 12 months prior to conducting the interviews. Subjects completed a questionnaire, prepared by the investigator, to measure their knowledge of their myocardial infarction and its treatment, and the Cardiac Adjustment Scale, a measure of psychological adjustment of heart disease patients.

The purpose of the study was to determine the relationship between the level of knowledge about heart disease possessed by the post myocardial infarction patient and his psychological adjustment. Such a relationship was not established. Some interesting trends were noted:

1. The subscales of etiology and symptoms and of activity had higher correlation coefficients with the Cardiac Adjustment Scale than did either risk factors or diet.

2. Those subjects who had more recently been admitted to the hospital knew more about their disease process,

but had lower adjustment scores, while the exact reverse was true of those admitted more than 7.5 months prior to the interview.

3. Those subjects who had been admitted previously to a hospital knew less about their disease than those who had not previously been hospitalized. There was, however, a significant correlation between educational level of the subject and his score on the knowledge questionnaire.

Conclusions

In a study of this size, it must be recognized that generalized conclusions would be difficult to substantiate. Inferences drawn from the study include:

1. Knowledge about etiology, symptoms and appropriate activity levels seem to be more closely correlated to psychological adjustment than knowledge about diet or risk factors.

2. Knowledge levels about cardiac disease seems to be higher in the immediate post-hospitalization time period. It seems likely that the early convalescent phase may be a time when the patient would be most interested in learning more about his illness and medical regimen.

3. Psychological adjustment following an initial myocardial infarction seems to improve over the first

year.

Recommendations

The following are suggested by the investigator for further study:

1. To examine the relationship between knowledge and psychological adjustment using a larger and more heterogenic population.

2. To examine the relationship between selective knowledge factors and adjustment. The knowledge factors which appear to have more promise in this regard are: etiology and symptoms, risk factors and/or activity apptopriate for a post myocardial infarction patient.

3. To examine the relationship between knowledge and psychological adjustment over a period of time using a longitudinal approach.

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APPENDIX A

CORRESPONDENCE

In partial completion of the requirements for a Master of Nursing degree at the University of Oregon School of Nursing, I am undertaking a study of myocardial infarction patients. The data will be collected by means of an interview in the homes of selected patients. They will be given a questionnaire to measure their knowledge about aspects of their treatment program, such as activity and diet. They will also be given Rumbaugh's Cardiac Adjustment Scale (copyright 1964, Educational and Industrial Testing Service). Information will remain confidential, and anonymity of those participating in the study will be preserved.

To control the effect of a patient's long-term illness on the data, I plan to interview only those who have had their first myocardial infarction. A form is enclosed for your signature which requests two items of information: Does the patient meet the criterion of a first myocardial infarction? May I have permission to interview this patient?

Upon completion of the study, copies of the report will be placed in the library of the University of Oregon Medical School where it will be available for review by those interested.

Yours truly,

Donna Routh
4421 NE 22nd
Portland, Oregon 97211

Donna Routh is a regularly enrolled graduate student at the University of Oregon School of Nursing. Any assistance you can offer Mrs. Routh will be greatly appreciated.

May Rawlinson, Ph.D.
Field Study Advisor

Donna Routh, R.N., graduate student at the University of Oregon School of Nursing, is collecting data for her Field Study. This data will include results of a questionnaire measuring patient knowledge of selected aspects of their treatment and patient response to the Cardiac Adjustment Scale.

_____
name

_____
address

_____

_____does

_____does not meet the criterion for participation in the study.

This patient _____may

           _____may not be invited to participate in the above described study.

_____   _____
date   Attending Physician

Dr.   has indicated that you are in a unique position to
contribute to a study I am conducting regarding the
recovery process following a heart attack. My interest
lies in factors affecting the recovery that a patient may
experience following a heart attack. My study is designed
to examine some of these factors through talking to patients
who have had such an experience.

This letter is to request your permission to participate
in this study. It will involve an interview and a
questionnaire in your home (or other location convenient
to you) lasting approximately one hour. A form is included
requesting your permission to participate and asking you to
indicate times and days convenient for you.

I hope that it will be possible for you to participate
in this study, but participation or nonparticipation will
not affect your medical care. Whichever choice you make, I
would appreciate your returning the enclosed form to inform
me of your decision. A self-addressed stamped envelope
is included for this purpose. If you have any questions,
feel free to ask when returning the form, or contact me
at my home (281-5574). Thank you for your consideration.

                    Sincerely,

                    Donna Routh, R.N.
                    Graduate student
                    University of Oregon

———————————————

———————————————

———————————————

I agree to participate in the study being conducted by
Donna Routh, R.N., regarding the recovery process of heart
disease. The tasks expected of me include answering
questions by questionnaire and a personal interview.
Information that I divulge will be handled confidentially
and used only for scientific publication or professional
teaching programs.

The purpose of this study is to examine some of the factors
involved in the recovery process following a heart attack.
I will not directly benefit from the investigation, but the
knowledge resulting from it may be useful in the long-term
treatment of my disease and the treatment of other patients.

I may withdraw my consent at any time without fear of
impairment of the medical care I receive.

_____ agree to participate.

_____ choose not to participate.

———————————————   ———————————————
date   signature

What days and times are most convenient for you?

———————————————

———————————————

———————————————

APPENDIX B

QUESTIONNAIRE

QUESTIONNAIRE

Directions: Place an X before each answer that you consider correct. Some questions or statements <u>have more than one correct answer</u>:

1. Heart attacks are caused by:

_____a. arteriosclerosis. (hardening of the arteries)

_____b. an infection.

_____c. not enough oxygen to the heart.

2. Some of the symptoms that would cause you to suspect a heart attack are:

_____a. heavy squeezing chest pain.

_____b. nausea. (being sick to the stomach)

_____c. headache.

_____d. constipation.

3. If a person suspects he is having a heart attack, he should:

_____a. immediately drive himself to his doctor's office.

_____b. ask someone else to reach his doctor and make himself as comfortable as possible.

_____c. breathe very rapidly to get more air.

4. Heart attacks are:

_____a. always preceeded by periods of chest pain.

_____b. sometimes sudden and unexpected.

_____c. always preceeded by fainting spells.

5. Some of the factors that increase the risk of a heart attack are:

_____a. overweight.

_____b. regular exercise.

_____c. high blood pressure.

_____d. smoking cigarettes.

_____e. smoking a pipe.

_____f. liver disease.

6. After a heart attack:

_____a. activity is very limited for the rest of your life.

_____b. one should find a desk job.

_____c. most people can return to normal activity after a three or four month period of rest.

_____d. return to activity should be a gradual process.

7. Some of the effects of regular exercise are that it:

_____a. stimulates the circulation of blood.

_____b. allows one to eat more cholesterol.

_____c. builds up your strength.

_____d. helps to avoid overweight.

8. Sexual activity:

_____a. greatly increases the strain on the heart.

_____b. can usually be resumed at the same level as before the heart attack.

_____c. must be decreased after the heart attack.

9. Some of the foods which are high in cholesterol are:

_____a. beef steak.

_____b. apples.

_____c. cheddar cheese.

_____d. fish.

_____e. cottage cheese.

_____f. eggs.

_____g. bacon.

_____h. green vegetables.

10. Fats and oils which are lowest in cholesterol are:

_____a. butter.

_____b. safflower oil.

_____c. lard.

11. The following menu(s) that are low in cholesterol are:

_____a. broiled salmon steak, broccoli, rice, cottage cheese and peach salad.

_____b. steak, baked potato with sour cream, green salad.

_____c. grapefruit, english muffin with jam, cold cereal.

_____d. omelet, toast, coffee.

_____e. hot dogs, baked beans, potato salad.

_____f. baked turkey, bread stuffing, yams, string beans.

12. To control the amount of fat, foods should be:

_____a. fried.

_____b. broiled.

_____c. poached.

_____d. deep fried.

_____e. baked.

_____f. boiled.

13. Cigarette smoking:

_____a. decreases blood pressure.

_____b. increases the chance of another heart attack.

_____c. is less dangerous than smoking a pipe or a cigar.

_____d. narrows the blood vessels that supply oxygen to the heart.

Directions: Mark an X in the appropriate column to indicate whether you agree or disagree with the following statements:

<u>Agree</u>   <u>Disagree</u>

____   ____14.   The earlier a person begins to smoke, the greater the risk to his health in future years.

____   ____15.   If one has smoked for 20 or 30 years, it will not help to quit now.

____   ____16.   Only diet margarine can be used for the fat allowance in the diet.

____   ____17.   Emotional stress can have as much of a strain on the heart as excessive physical activity.

____   ____18.   Salt causes the body to retain fluid.

____   ____19.   As we get older, our bodies need fewer calories.

____   ____20.   Persons who are overweight usually have low blood pressure.

____   ____21.   Being overweight increases the work load of the heart.

____   ____22.   A person's ideal weight is usually reached between the ages of 30 and 40.

____   ____23.   Frequent light meals make heavier demands on the heart than one big meal a day.

____   ____24.   The tendency toward heart attacks runs in families.

____   ____25.   People can have high blood pressure without knowing it.

____   ____26.   Isometric exercises aid blood circulation.

____   ____27.   Daytime naps, especially after meals, can be beneficial.

____   ____28.   Alcohol is a heart stimulant.

<u>Agree</u> <u>Disagree</u>

____ ____ 29. If you've had one heart attack, you're
               bound to have another.

____ ____ 30. Irregular heart rhythms should be
               reported to the doctor.

APPENDIX C

CARDIAC ADJUSTMENT SCALE

Y N ?

1. My legs ache
2. I like to persuade others
3. I have had a good life
4. I worry about the effect which my heart condition might have
    upon my loved ones
5. It bothers me when people look at me

Y N ?

6. Life is a bitter struggle for a cardiac
7. I like to meet new people
8. My breathing gives me much trouble
9. I feel extreme guilt about something
10. Cardiacs are not capable of self-support

Y N ?

11. I often feel overwhelmed by my problems
12. I am treated like a child
13. I would like to work within my limitations
14. I could be much worse off than I am
15. I am not able to accept death

Y N ?

16. My heart condition is always uppermost in my mind
17. I have new interests to occupy my time since I developed heart trouble
18. I don't want other people to help me
19. I feel severely handicapped
20. The prospect of working again scares me

Y N ?

21. The State should do more for me
22. My doctor is not sincerely interested in me
23. I worry about whether I shall live until tomorrow
24. I have time to do the important little things since my heart ailment
25. I am a failure

Y N ?

26. Doctors give me many kinds of pills because they really don't
    know which pill is the right one for me
27. I like to be doing things
28. I am afraid of the least bit of excitement
29. I have a long productive life to live
30. I am not like other people

Y N ?

31. I love children
32. I have a lot of trust in my doctor
33. Things will be better tomorrow
34. I have yet to find a good doctor
35. My friends have deserted me

Y N ?

36. I am too tired to do anything much of the time
37. I frequently tell others that they should be more considerate
    of me because of my heart condition
38. I feel that there is little research being done to help cardiacs
39. There is nothing so terrible as being a cardiac
40. Little things bother me more than they used to

Y N ?

41. Nobody needs me
42. I hate some people
43. At times I feel like killing something
44. I like people
45. I am bitter about being a cardiac

Y N ?

46. Heart ailment is the worst kind of sickness
47. If I had the right kind of pill, I would be free of my heart trouble
48. When I feel a new pain in my body, it frightens me
49. Cardiacs have much for which to be thankful
50. I am tired most of the time

Turn the page and go on.

		Y	N	?
51.	I truly appreciate what my doctor has done for me			
52.	I like to read			
53.	At times I feel I am no good to anybody			
54.	Doctors don't know what they are doing most of the time			
55.	Many people are worse off than I am			

		Y	N	?
56.	Cardiacs are unable to live normal lives			
57.	I wish I had never been born			
58.	I have pains in my right arm			
59.	When one lives within his limitations, it is not so bad being a cardiac			
60.	Life still holds much reward for me			

		Y	N	?
61.	People make me nervous			
62.	If it weren't for my loved ones, I wouldn't want to live			
63.	Life has been cruel to me			
64.	Sick people should be put out of their misery			
65.	There is nothing worse than a heart condition			

		Y	N	?
66.	Doctors take a real interest in me			
67.	I become very anxious when I discuss my heart condition with anyone			
68.	I often dream about not being a cardiac			
69.	I am a "fussy" eater			
70.	I have pain in the pit of my stomach			

		Y	N	?
71.	I can't do anything useful			
72.	I tire easily			
73.	Life has taken on new significance since my heart trouble			
74.	Doctors are dedicated men			
75.	I keep knowledge of my heart condition from my loved ones			

		Y	N	?
76.	I am interested in hobbies that do not call for much physical activity			
77.	I can't do anything that I really enjoy			
78.	Work would endanger my cardiac condition			
79.	I hate myself			
80.	When I do things, I must be able to finish a job without interruption			

		Y	N	?
81.	No one loves me			
82.	I am not interested in things			
83.	I frequently take my pulse			
84.	I am very weak as a result of my cardiac condition			
85.	I am "easy going"			

		Y	N	?
86.	Most jobs aggravate me			
87.	People wish I would die			
88.	I often feel sorry for myself			
89.	Employers should give special consideration to the kind of jobs given to cardiacs			
90.	It is so difficult to admit to myself that I am a cardiac			

		Y	N	?
91.	I enjoy being sick at times			
92.	I have stomach trouble			
93.	I feel cheated because of my heart condition			
94.	I feel sorry for myself			
95.	My cardiac condition has made me appreciate life more			

		Y	N	?
96.	I have a hard time going to sleep at night for fear I won't wake up			
97.	I deserve special attention because of my heart			
98.	I feel "let down" most of the time			
99.	My doctor doesn't give enough attention to me as an individual			
100.	I am afraid that people will find out about my heart condition			

		Y	N	?
101.	The sound of my heart beat bothers me when I try to sleep			
102.	I will soon die			
103.	There is really no good food for me to eat			
104.	I like to talk with other cardiacs about heart trouble			
105.	I wish I would die			

CARDIAC ADJUSTMENT SCALE

by
Duane M. Rumbaugh

NAME _____ AGE _____ SEX _____

PERMANENT ADDRESS _____

CURRENTLY EMPLOYED YES _____ NO _____   PRESENT OCCUPATION _____

INSTRUCTIONS

This scale has been devised in order to gain a better understanding of cardiacs.

It is NOT a test which can be passed or failed. There are no "right" or "wrong" answers. Therefore, you should not hesitate to freely record your reactions to the items.

Please keep the following points in mind as you take this scale:

Read and answer EACH item in the scale. It is important that you respond to all of them.

Answer each item quickly with your first reaction after having read the item. You should be able to complete the entire scale in approximately fifteen minutes.

All items are to be answered "Yes", "No", or "?" by blackening in the space under the column headed "Y" for "Yes", "N" for "No", or "?".

If a given item is either wholly or for the most part TRUE of you, you should blacken the space under "Y" for "Yes" as in example item "a" in the box to the right.

If a given item is either wholly or for the most part NOT TRUE of you, you should blacken the space under "N" for "No" as in sample item "b".

	Section of Answer Column Correctly Marked		
	Y	N	?
a	▰▰▰	:::::	:::::
b	:::::	▰▰▰	:::::
c	:::::	:::::	▰▰▰

If you can not truthfully respond with either a "Yes" or "No" answer, you should blacken the space under "?" as in sample item "c". The "?" answer means "I don't know" and should not be used any more than absolutely necessary.

Be sure to answer every question.

APPENDIX D

PATIENT IDENTIFICATION INFORMATION

Date _____

Date of Heart Attack _____

A. Age

____ below 40

____ 40-44

____ 45-49

____ 50-55

____ 56-59

B. Residence

____ alone

____ with wife

____ with a relative

____ with a friend

C. Ethnic Group

____ Caucasian

____ Negroid

____ Oriental

____ Other

D. Religion

____ Protestant

____ Roman Catholic

____ Jewish

____ Other

E. Education

____ Less than 8th grade

____ Attended high school

____ Completed high school

____ Attended college

____ Completed college

____ other _____

F. Work Classification of U.S. Bureau of Labor Statistics

White Collar Workers

____ Professional Persons

____ Proprietors

____ Managers

____ Officials

____ Clerks

____ Salespeople

Blue Collar Workers

____ Skilled workers

____ Foreman

____ Semi-skilled

____ Unskilled

____ Service Workers

____ Retired

____ Unemployed

G. Length of Hospitalization of Heart Attack

_____ 1 week

_____ 2 weeks

_____ 3 weeks

_____ 1 month

_____ more than 1 month

_____ don't know

H. Illnesses other than Heart Disease

_____ Diabetes

_____ Tuberculosis

_____ Cancer

_____ Emphysema

_____ Ulcers

_____ other _____

I. Previous Hospitalizations

_____ none

_____ one _____ Year _____Reasons

_____ two _____ Year _____Reasons

_____ three _____ Year _____Reasons

ABSTRACT

AN ABSTRACT OF THE FIELD STUDY OF

DONNA C. ROUTH

For the MASTER OF NURSING

Date of receiving this degree: June 13, 1975

Title: THE RELATIONSHIP BETWEEN KNOWLEDGE AND

PSYCHOLOGICAL ADJUSTMENT OF THE

MYOCARDIAL INFARCTION PATIENT

Approved: ███████████████████████████████

May Rawlinson, Ph.D., Associate Professor
Field Study Advisor

The relationship between attitudes and knowledge
involving physical illness, specifically myocardial infarc-
tion, has not been reported in the literature. The literature
suggeste that one of the factors related to attitude toward
mental illness is the affected person's general fund of
illness-related information. The interest of this study
was to determine the relationship between the level of
knowledge about heart disease possessed by the post
myocardial infarction patient and his psychological
adjustment.

The subjects were limited to males, 59 years of age
or less, who had suffered an initial myocardial infarction
in the period between 3 to 12 months prior to being
interviewed for this study. Sixteen male subjects who had

been admitted to Coronary Care Units in four community hospitals met the criteria of the study. They were tested as to knowledge about their illness and their adjustment to their myocardial infarction. A significant correlation was found between the patient's educational level and his score on the knowledge questionnaire. Interesting trends were noted. The variables of knowledge and psychological adjustment proved not to be significantly related.