



Cardiac patient education and its relationship to knowledge, anxiety, and health perception
by Florence Olga Kubinec

A thesis submitted in partial fulfillment of the requirements for the degree of MASTER OF NURSING
Montana State University

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Abstract:

The purpose of this study was to examine the effect of the Alberta Heart Foundation Rehabilitation Program on participants' level of knowledge, anxiety, and health perception. Twelve participants from the Lethbridge and Red Deer programs were in the experimental group; twelve subjects randomly selected from the medical records of the Lethbridge Municipal Hospital were included in the control group.

All subjects were pre-tested. The experimental group was post-tested at the completion of the program and the control group was post-tested six to seven weeks following the completion of the pretest. The Taylor Manifest Anxiety Scale, a knowledge questionnaire designed by D. Bille, and a health perception questionnaire based on Cantri's ladder were used to measure the effectiveness of the program.

The Mann Whitney U Statistical Test was used to determine the differences in knowledge, anxiety, and health perceptions between the two groups. No significant differences were found between the experimental and control groups on the post-test. The Fisher Exact Probability Test was used to determine the relationship between the dependent variables. In the experimental group, there was a significant association between perception of present health and perception of health in six months. Individuals who perceived their present health as good also perceived their future health as good.

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TO KNOWLEDGE, ANXIETY, AND HEALTH PERCEPTION

by

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A thesis submitted in partial fulfillment
of the requirements for the degree

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ABSTRACT

The purpose of this study was to examine the effect of the Alberta Heart Foundation Rehabilitation Program on participants' level of knowledge, anxiety, and health perception. Twelve participants from the Lethbridge and Red Deer programs were in the experimental group; twelve subjects randomly selected from the medical records of the Lethbridge Municipal Hospital were included in the control group.

All subjects were pre-tested. The experimental group was post-tested at the completion of the program and the control group was post-tested six to seven weeks following the completion of the pre-test. The Taylor Manifest Anxiety Scale, a knowledge questionnaire designed by D. Bille, and a health perception questionnaire based on Cantril's ladder were used to measure the effectiveness of the program.

The Mann-Whitney U Statistical Test was used to determine the differences in knowledge, anxiety, and health perceptions between the two groups. No significant differences were found between the experimental and control groups on the post-test. The Fisher Exact Probability Test was used to determine the relationship between the dependent variables. In the experimental group, there was a significant association between perception of present health and perception of health in six months. Individuals who perceived their present health as good also perceived their future health as good.

Chapter 1

INTRODUCTION

Patient education is an area of health teaching which is old but which is experiencing a rebirth. Previously, patient education was often viewed as a private matter between physician and patient. Wars and accidents and the resulting traumatic injuries have emphasized the need for teaching in rehabilitation. Shortened hospital stay with early ambulation required preparation for the convalescence of the patient at home. An increase in long term illnesses and disabilities due to the improvement in medical treatment and the increased longevity of individuals have also been an impetus to the growth of patient education.

Somers (1978) identified consumer health education as those activities that:

1. inform people about health, illness, disability, and ways in which they can improve and protect their own health, including the more efficient use of the delivery system;
2. motivate people to want to change to more healthful practices;
3. help them to learn the necessary skills to adopt and maintain healthful practices and lifestyles;
4. foster teaching and communication skills in all those engaged in educating consumers about health;
5. advocate changes in environment that will facilitate healthful conditions and healthful behavior; and

6. add to knowledge through research and evaluation the most effective ways of achieving those objectives.

A number of programs have been devised and implemented on educating the consumer, a potential patient, on how to stay healthy, when to seek timely medical advice, and when to look forward to being rehabilitated when ill. Working towards these goals, educational programs for post-myocardial infarction patients and their families have been developed and are an integral part of the rehabilitation program.

A number of articles are available describing a variety of cardiac rehabilitation programs (Kelsey and Beamer, 1973; Crawshaw, 1974; Rothman, 1974; Franklin, Besseghini and Golden, 1978; Baker and McCoy, 1979; Stevens, 1979). Although the literature may be useful in stimulating others to consider various ways to deliver cardiac patient education programs, they are deficient in hard evidence concerning outcome. Evaluation methodology, including potential benefits and designs is relatively undeveloped.

This researcher has been involved in a number of coronary rehabilitation programs sponsored by the Alberta Heart Foundation in Lethbridge, Alberta. Although participants were asked to comment on the pros and cons of the individual sessions and the program as a whole, there was little or no evaluation done using the content objectives of the individual sessions or program. Participants were

also asked to submit suggestions for improving the program but no mechanism was set up to evaluate or follow through on the suggestions.

Purpose of Study

The purpose of this study was to evaluate the immediate effectiveness of the Alberta Heart Foundation's Coronary Rehabilitation Program on the participant's level of knowledge of cardiovascular disease and its preventive aspects, feelings of anxiety, and health perceptions. The research questions to be asked were: As a result of program participation, did the participant's knowledge of cardiovascular disease and its preventive aspects increase; did the participant's feelings of anxiety decrease; and did the participant's perception of his health improve?

Definition of Terms

Anxiety - an individual's normal feeling state in a reaction to a real or perceived-to-be real threat and is accompanied by specific physiologic responses.

Knowledge - a cardiac individual's level of information concerning cardiovascular disease, diet, medications, physical activity, stressful situations, work, weight loss, smoking, and alcohol.

Health perception - a picture of his health expressed by the individual in his own terms.

Alberta Heart Foundation Coronary Rehabilitation Program - a program made available to cardiac patients and their families on a voluntary basis. The program is offered throughout Alberta, a minimum of twice annually, to cardiac patients following discharge from hospital and during their convalescence at home, and to cardiac patients and their families at any time during and after their rehabilitation. The six week program consists of weekly classes of approximately two and one half hours in duration. The program is coordinated by a nurse and is conducted by a local multidisciplinary team usually consisting of physicians, nurses, a dietitian, a pharmacist, a social worker or psychologist, and a vocational counselor. Content is provided through lecture, discussion, demonstration, and audio visual material. Topics discussed during the program include stress and relaxation, diet, medications, sexual activity, exercise, vocational counseling, psychological aspects of heart disease, and general medical information related to cardiovascular diseases (see Appendices A and B). Participants were requested to donate five dollars per family for the course, but the fee is not compulsory.

Chapter 2

CONCEPTUAL FRAMEWORK AND REVIEW OF THE LITERATURE

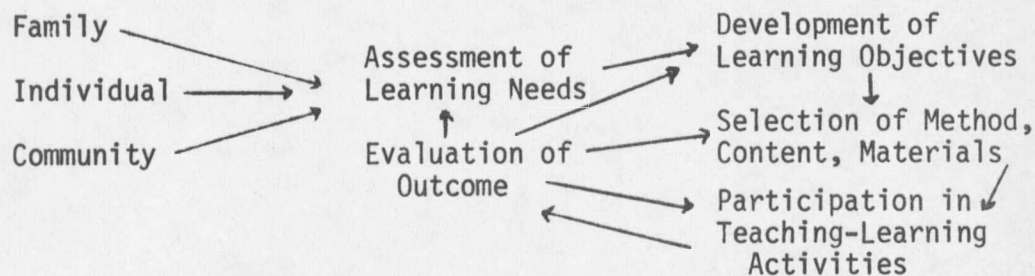
The conceptual framework for this study was the nursing process. "Process" is a method of doing something that generally involves a number of steps and is intended to bring about a particular result. In 1979, the Alberta Association of Registered Nurses defined nursing practice as the assisting of clients in a variety of practice settings with those activities which promote self-direction in the maintenance, restoration, and promotion of health. The nursing process (assessment planning, implementation, and evaluation) is the methodology used to carry out this function.

The steps in the nursing process follow each other logically. Before intervening, the nurse must initially assess the need for action. This assessment involves gathering data, analyzing, and synthesizing pertinent patient information. Problems or needs are then identified and prioritized. Based on the identified needs, goals or expected outcomes are established. These should be measurable, attainable, reasonable, and representative of the patient's aspirations. A plan of action is devised and implemented and the effectiveness of the actions are evaluated. The evaluation may result in information that leads to a modification of the problem list, the plan of action, or the expected outcomes. Thus, the process becomes

circular.

The nursing process can be applied to the teaching-learning process in adult education. There is an assessment of the learners' needs, the mutual development of goals and the planning, implementation, and evaluation of programs. A conscious effort is made in nursing and in adult education to involve the client in defining goals and planning the ways and means by which they can be met. The following illustrates the nursing process and its application to adult education:

Figure 1. The Nursing Process and Its Application to Adult Education



Because this study addresses itself to adults, the learning theory is one of adult learning or andragogy. Knowles' (1976) assumptions about adults as learners may be classified as self-concept, experience, readiness to learn, and orientation to learning. These assumptions are:

1. Adults view themselves as responsible, self-directing individuals.

2. Individuals accumulate a growing reservoir of experience which becomes an increasing resource for learning.
3. The primary determinant of readiness to learn in the adult is the developmental task of his social role.
4. Orientation toward learning shifts from one of subject centeredness to one of problem-centeredness.

The framework, in essence, states that:

1. a climate conducive to adult learning is to be established;
2. learners need to be involved in the planning;
3. learning activities are identified and objectives or goals are set;
4. learning activities are developed for the adult learner;
5. participants are involved in the learning activity; and
6. learning is evaluated by the teacher and the learner.

Literature Review

Survival from an acute myocardial infarction has become an increasingly probable reality for the majority of those stricken because of improved diagnostic and treatment measures (Fardy, 1980; Garrity, 1975). However, non-fatal myocardial infarctions and experiences associated with them are considered major life crises. The victims of a myocardial infarction can and usually do have grave physiological, psychological, sociological, and economic ramifications if the event is not dealt with in a propitious manner.

The literature concerning patients who have had a myocardial

infarction indicates that a substantial number experience difficulty in adapting to their change in health status. In the post hospital phase, feelings of anxiety and depression (Soloff, 1977-78; McEachern, 1977; Wrzesniewski, 1976; Wishnie, 1971; Wynn, 1967), poor health perceptions (Speegle, Bayer, and Greene, 1979; Garrity, 1973A), denial (Soloff, 1977-78), lack of knowledge and understanding regarding their condition (Borgman, 1975; Crawshaw, 1974) and concerns regarding vocational, social and family obligations (Wenger, 1976) have been elicited from patients who have had myocardial infarctions.

A study of Croog, Shapiro, and Levine (1971) indicated that 20 percent of the first infarction patients studied denied that they had a heart attack when asked and that this denial persisted for a one year follow-up period. This verbal denial of their cardiac event existed despite the time in a Coronary Care Unit and up to eighteen days of hospitalization. In addition, there was a tendency for deniers to resist medical advice. Denials, in this context, was defined as the conscious or unconscious repudiation of part or all of the total meaning of an event to allay fear, anxiety, or other unpleasant effects.

The concept of denial as an adaptive defense received some support in related research on the response to open heart surgery. Excessive anxiety and depression and the inability to use denial to combat the "awe" of open heart surgery have been associated with a

greater incidence of post-cardiotomy delirium (Blacher, 1972), morbidity and mortality (Kimball, 1972).

Tjoe and Lurie (1972) and Hackett and Cassem (1969) identified that patients experiencing chest pain often delayed twelve hours or more before seeking medical attention. Those who had had a myocardial infarction delayed just as long or longer than those who had never had a myocardial infarction. This denial during convalescence represents an insidious and chronic hazard and as such increases the coronary risk factor.

The maladaptive behaviors of myocardial infarction patients often interferes with their hospital management and recovery, as well as their reintegration into family and community. These studies suggest that these behaviors and other difficulties may arise because of lack of information regarding the disease and treatment, lack of psychosocial support, and inadequate planning for rehabilitation.

Tessler's and Mechanic's study (1978) indicated that psychological distress, defined as lack of happiness, nervousness, and negative affect (feeling of loneliness; depressed or blue; didn't have the energy you needed), affected how individuals perceived their health. Garrity (1973B) noted that self-perceived health status was associated with return to work after the heart attack. The better the individuals perceived their health to be, the more likely they were to return to work after discharge.

Return to work has been identified as perhaps the only firm index of recovery and successful rehabilitation as it enables patients to be economically independent and return to normal lifestyles and roles in society (Wenger, 1976). But what of those who because of age or other factors, do not return to work? According to Hackett and Cassem (1973) physical activity is necessary to enhance self-esteem and promote a sense of independence. As physical activity does much to promote healthy psychological behavior, it might be utilized as an index of recovery and successful rehabilitation.

Consumer demands, rising medical costs, legal pressures, and health agency accreditation have influenced the health care professionals' concern about patient education. A patient who has not been provided with adequate educational care can no longer be considered adequately treated or cared for. Somers (1976) asserted that "a few million dollars" spent to teach the consumer/patient to develop a lifestyle conducive to health and, when ill or disabled to understand and cope more effectively with one's own health problems, could be more cost effective than billions spent on the development of new medical technology and expensive in-patient programs.

A number of studies substantiate the value of patient education. Myers' (1964) experiment demonstrated that less stress and few misconceptions were created for patients who experienced an unfamiliar diagnostic procedure in which they were given information which they

could use to interpret the experience. Lindeman and Van Aernam (1971) demonstrated that structured preoperative teaching improved the patients' ability to deep breathe and cough, and reduced their length of hospital stay. Rosenberg's (1971) educational program for fifty patients with congestive heart failure demonstrated an increase in the patients' knowledge about their disease, medications, and diets as well as adherence to a prescribed regimen. Linde and Janz (1979) reported that cardiac patients' knowledge increased following a comprehensive teaching program and that patients taught by master's prepared nurses had significantly higher test scores at discharge than patients taught with less than master's preparation. In addition, Lindeman (1971) and Toth (1980) demonstrated that structured teaching (the use of specific guidelines for teaching content) is more effective than unstructured teaching.

The need for cardiac rehabilitation, which should be a systematic program whose goal is to return the cardiac patient to a health lifestyle, is essential for the long term care of the cardiac patient. Information, exercise testing, prescription, and training are all part of a rehabilitation program. According to Edgett and Porter (1980), a comprehensive approach to cardiac rehabilitation should include four program phases: acute, in-hospital phase, program following discharge which is usually hospital based and is of two - four months duration, long term supervised conditioning and maintenance program, and long

term ongoing program conducted at home.

Granger (1974) reported that a group therapy approach was being used in a cardiac rehabilitation program. In addition to cardiovascular stress testing, physical exercise, and weight loss regimens, the program was designed to mitigate emotional problems and maladaptive coping behavior patterns, teach methods of tension reduction, and intervene in the high risk environment to which the patient would return. Clinical impressions were the only evaluation tool used in this program.

Wrzesniewski (1976) found that men who had a myocardial infarction had a higher level of anxiety than did men free from coronary disease and rheumatic patients. Following a 28 day post hospitalization program, general and specific anxiety appeared to decrease. The Attitude Toward Illness Subscale and the Taylor Manifest Anxiety Scale were used to measure the anxiety. The study was conducted in Poland and there was no indication as to whether the tools were administered in English or if they had been translated. As there was no appropriate control group in the study, time may have been the factor which decreased the anxiety.

An education program conducted by Owen, McCann, and Hutehmyer (1978) with a group of cardiac patients indicated that patients are capable of learning pathophysiology, appropriate adjustments in lifestyles, name, function and side effects of medications, risk

factors, signs and symptoms of complications, when to notify their physician, and rationale for medical follow-up; and they can learn this in a group setting. Although the authors stated that the group setting appeared to decrease the anxiety level of members, no tool was used to measure the anxiety level. They also noted that knowledge continued to increase after discharge from hospital. The provision of written material may have been a factor in the increased knowledge.

Programs will need to be adapted to suit particular area and individual needs, but the philosophy is the same: total patient care. Hellerstein (1972) stated that the goal of cardiac rehabilitation is restoration of an individual to his optimal status in physiological, psychological, and vocational terms, and to prevent the progression of the underlying disease process. Naughton (1977) stated that total cardiac rehabilitation is a process of longitudinal comprehensive care through which identified patients are restored to and maintained at their optimal medical, physical, social, vocational, and recreational status. These definitions demand development of programs that provide optimal total patient care and that are open-ended, that is, extend for the remainder of the patient's life.

Hypotheses

In light of the literature review and the research questions asked, the following hypotheses were tested:

Hypothesis I

As a result of program participation, there will be a greater increase in the participants' knowledge post test scores than in the knowledge post test scores of the non-participants.

Hypothesis II

As a result of program participation, there will be a greater decrease in the participants' anxiety post test scores than in the anxiety post test scores of the non-participants.

Hypothesis III

As a result of program participation there will be a greater increase in the participants' "perception of the present health" post test scores than in the "perception of present health" post test scores of the non-participants.

Hypothesis IV

As a result of program participation, there will be a greater increase in the participants' "perception of his health prior to his heart attack" post test scores than in the "perception of his health prior to his heart attack" post test scores of the non-participants.

Hypothesis V

As a result of program participation, there will be a greater

increase in the participants' "perception of his health in six months" post test scores than in the "perception of his health in six months" post test scores of the non-participants.

Hypothesis VI

As a result of program participation, there will be a greater increase in the participants' "perception of health of an average individual of the same age and sex" post test scores than in the "perception of the health of an average individual of the same age and sex" post test scores of the non-participants.

Chapter 3

METHODOLOGY

A quasi-experimental design was used for this study. Subjects were pre-tested to determine whether they were similar in terms of knowledge, anxiety, and health perceptions. If the control and experimental groups responded similarly on the pre-test questionnaires, then any post-test differences in knowledge, anxiety, and health perceptions could be attributed to the experimental treatment. Figure 2 depicts this study symbolically.

Figure 2. Symbolic Design

O_1	x	O_2
O_1		O_2

The top line in Figure 2 represents the experimental group which has had both a pre-treatment test (O_1) and a post-treatment test (O_2) and has been exposed to the experimental treatment of interest (x). The second row in the figure represents the control group, which differs from the experimental group only by the absence of exposure to the experimental treatment.

Sample

Subjects in the experimental group were individuals who had at least one myocardial infarction and who voluntarily attended the Spring 1981 six week Alberta Heart Foundation Coronary Rehabilitation Program in Lethbridge or Red Deer, Alberta. The programs are taught by different individuals and although the topic headings differ on the course outline, the content, which is prescribed by the Alberta Heart Foundation is the same (see Appendices A and B). Ten subjects attended the Lethbridge program and eleven the Red Deer program. The pre-test scores of both groups were analyzed for significant differences and as none were identified, the participants from both cities were placed in the one experimental group.

Subjects in the control group consisted of fifteen individuals who had at least one myocardial infarction within the previous three years and who had not attended a structured coronary rehabilitation program. Individuals over eighty years of age and individuals not living at home or in a Lodge (retirement home) in Southern Alberta were eliminated because of accessibility problems.

Since the follow-up questionnaire was used, it was necessary to keep a record of the names and addresses of the subjects. However, to ensure confidentiality, the identity of the subjects was separated from the data they provided by assigning each subject a number and using this number on all questionnaires.

Procedure

Permission was granted by the administration of a Lethbridge Hospital to utilize medical records to select and contact subjects for the control group (see Appendix C). A letter was also sent to the Chief of Medicine of the same hospital explaining the study and requesting his assistance in informing the internists and soliciting their cooperation (see Appendices D and E). For the experimental group, the coordinators of the programs were contacted by telephone and information was provided regarding the study and the time required for the pre-test in the first class.

The experimental group was given the pre-test in the first class of the Coronary Rehabilitation Program. A letter explaining the study was read to the Lethbridge and Red Deer participants by a registered nurse (see Appendix F). Pre-tests and covering letters were circulated to the participants (see Appendix G). Those willing to participate in the study were given one hour to complete the pre-test. The pre-tests were collected by the registered nurse and returned to the researcher. A post-test was given to participants upon completion of the final class (see Appendix H). Instructions were given to complete the questions independently at home and to return the test to the researcher within one week in the self-addressed stamped envelope.

The control group was given the pre-test (see Appendix G) within

seven to ten days of the experimental group's testing. The letter explaining the study, the cover letter, and the pre-tests were delivered to participants in Lethbridge by the researcher.

Participants living outside of Lethbridge had their packet mailed to them. Participants were requested to complete the questions independently and return the tests to the researcher within one week in the self-addressed stamped envelope. The post-test (see Appendix H) was mailed to participants six to seven weeks following the completion of the pre-test. The date noted on the cover letter of the pre-test was used to calculate this time. Participants were instructed to complete the questions independently and to return the tests within one week to the researcher in the self-addressed stamped envelope.

Instruments

Pre-tests and post-tests (see Appendices G and H) were used to collect data for this study. The tests consisted of five sections. Section I included both open and close ended questions designed to collect the demographic data needed to describe the sample and to provide specific information requested by the Alberta Heart Foundation. Questions requested by the Alberta Heart Foundation were noted by an asterisk (*).

Section II (requested by the Alberta Heart Foundation) was designed to identify the medications (prescribed and over-the-counter

drugs) that participants were presently taking. It also had the participants identify which of the medications they were taking related to their heart problem. The knowledge they had regarding the dose, frequency and side effects of these heart medicines was also elicited. By identifying the knowledge level of participants regarding their medications, the pharmacist was better able to plan his content prior to the class. Section II was included on the post-test to evaluate the effectiveness of the class on Heart Medicines.

Section II was included in the pre-tests and post-tests of the control group in order to identify medications that myocardial infarction patients were taking and to assess their level of knowledge regarding them. The post-test results were also used to evaluate the class on Heart Medicines. The information obtained could be used to promote the increased need for pharmacists to educate consumers regarding prescription and non-prescription drugs.

Section III was designed to elicit the individual's perception of his present health status, his status prior to his heart attack, his status six months from the time of the pre-test, and the status of an average individual of the same age and sex. Cantril's ladder scale (Cantril, 1965) was used to determine the perception of health status. It allowed the individual to express a picture of his health in his own terms. Utilizing a non-verbal ladder device, which was symbolic

of the ladder of health, the individual was able to place himself on the appropriate rung. The top of the ladder was the best of health as he defined it and the bottom was the worst possible health as he defined it.

Section IV measured the individual's level of anxiety. To measure this, the Taylor Manifest Anxiety Scale (Taylor, 1953) was utilized. The reliability of the original sixty-five items was 0.92. The more common fifty item test, which was the one used, was made up of the most consistent items on the original, and although this correlation was not reported, it was probably quite high as well (Bavelas, 1978). There was a possibility that social desirability could enter into the way in which the individual answered the statements. It was hoped that because of anonymity, the individuals answered the statements candidly.

Section V measured the participant's level of knowledge of cardio-vascular disease and its preventive aspects. The Life After A Heart Attack questionnaire developed by D. Bille (1977) was utilized (see Appendices J and K). The test contained forty questions of multiple choice and yes-no types related to medications, diet, physical activity, work, stressful events, weight loss, smoking, and alcohol. D. Bille noted that the reliability was 0.6443. He also stated that the questionnaire was judged to have both content and face validity as long as the rehabilitation program had the same objectives

that he used. As the objectives were not identified in the article (Bille, 1977) this researcher could not compare them with those of the rehabilitation program. Instead, this researcher and two coronary care nurses from the local hospitals compared the content taught in the Alberta Heart Foundation Coronary Rehabilitation Program to the content identified by D. Bille in his article "The Role of Body Image in Patient Compliance and Education" (1977). The content was judged to be similar and the tool deemed to be acceptable.

Data Analysis

Non-parametric statistics were used to analyze the data as the following assumptions underlying the use of parametric statistics could not be met: random selection of subjects, subjects drawn from a normally distributed population, and variable measured on at least an interval scale. In addition, the small sample size dictated the use of non-parametric statistics.

Descriptive statistics, mean and standard deviation, were used to describe the sample. The Mann Whitney U was used to determine if there were any significant differences between the experimental and control groups ($p=.05$)

The Fisher Exact Probability test was used to determine if there was a relationship between knowledge and anxiety, knowledge and perception of present health status and perception of present health

status, and perception of health prior to myocardial infarction, perception of health six months from now, and perception of the health of an average individual of the same age and sex.

Chapter 4

RESULTS

A total of twenty-one individuals attended the Alberta Heart Foundation Coronary Rehabilitation Program. The experimental group consisted of twelve of these individuals who completed the program and the pre and post tests. Seven individuals did not complete the program, that is, they missed more than one class. The reasons that these individuals did not complete the course were not identified. Pre and post tests from two of the participants were incomplete and could not be used. Of the fifteen subjects in the control group, twelve completed the pre and post tests, one died during the time the study was conducted, and two subjects were hospitalized at the time of the post tests.

Of the twenty-four individuals who participated in the study, four were forty-nine years or younger, seven were fifty to fifty-nine years, and thirteen were over sixty years of age. Twenty-three of the participants were married and one was widowed. Nineteen of the participants were male and five were female. In relation to education, fifteen of the participants had high school education, or a few years of high school education; eight had community college or technical institute education; and only one had some university education. Fifty-eight percent of the participants had their heart

problem (as defined by the patient) for two years or less and twenty-nine percent had a heart problem for more than three years. Fifty percent of the participants were ex-smokers while 41 percent were non-smokers.

Fifty-eight percent of the participants drank varying amounts of spirits, wine and beer while 25 percent were non-drinkers. The drinkers in the experimental group drank two to fifteen glasses of spirits per week, with a mean of 6.4. Beer consumption was one to six bottles per week with a mean of 2.17. The control group drank one to six glasses of spirits per week with a mean of 2.8. Their consumption of wine was one to two glasses with a mean of 1.5 and beer consumption was two to eight bottles with a mean of five per week. The experimental group consumed higher quantities of spirits than the control group, however, the control group consumed higher quantities of beer and wine.

The demographic characteristics of the subjects in the experimental and control groups are provided in Table 1. The demographic characteristics of the groups were similarly distributed.

Stage One Analysis

In a quasi-experimental design, if the experimental and control groups respond similarly on pre-tests, then any post test differences could be attributed to the experimental treatment. The pre-test

Table 1. Demographic Characteristics of Sample

Characteristics	Groups	
	Experimental	Control
1. Age:		
30 - 39 years	1	0
40 - 49 years	1	2
50 - 59 years	3	4
60 - 69 years	6	5
70 + years	1	1
2. Marital Status:		
Married	12	11
Widowed		1
3. Sex:		
Male	10	9
Female	2	3
4. Education:		
Some High School	7	7
High School		1
Community College/ Technical Institute	4	4
Some University	1	
5. Length of time heart problem existed:		
1 year	3	3
2 year	4	4
3 year	1	2
more than 3 years	4	3
6. Smoking habits:		
Smoker	2	0
Ex-smoker	5	7
Non-smoker	5	5
7. Drinking habits:		
Drinker	8	6
Ex-drinker	1	2
Non-drinker	3	4

scores of the experimental and control groups were analyzed to identify significant differences between the two groups. The means and standard deviations of the pretest scores for knowledge (Section V), anxiety (Section IV), and health perceptions (Section III) were calculated and the scores were analyzed using the Mann Whitney U. A .05 level of significance was used for interpreting the data.

Pre-test Scores

In the experimental group, the mean score for the knowledge test (Section V) was 27.33 and for the control group, the mean was 26.58. There was a difference of 0.75. The standard deviation for the experimental group was 4.70 and for the control, 4.06. The scores were analyzed using the Mann Whitney U and the result was 0.61. There was no significant difference on the knowledge test. Table 2 represents the results of that analysis.

On the anxiety test (Section IV), the mean score for the experimental group was 17.75 and for the control, 16.33. There was a difference of 1.12. The standard deviation was 9.056 for the experimental group and 10.53 for the control group. The Mann Whitney U yielded 0.49 and this indicated that there was no significant difference between the two groups. Table 2 represents the results of this analysis.

The scores on perceptions of health (Section III) were analyzed

Table 2. Means, Standard Deviations, and Mann Whitney U Values for Pre-Test Scores

Dependent Variables	Groups	x	S.D.	Mann Whitney U	p
Knowledge	Experimental	27.33	4.70	.61	.2709
	Control	26.58	4.06		
Anxiety	Experimental	17.75	9.056	.49	.3121
	Control	16.33	10.53		
Perceptions of present health	Experimental	5.58	1.24	.09	.4641
	Control	5.25	2.30		
Perceptions of health prior to heart attack	Experimental	6.42	1.97	1.096	.1379
	Control	7.08	2.94		
Perceptions of health in six months	Experimental	6.64	1.31	.06	.4761
	Control	6.25	2.09		
Perceptions of health of average individual	Experimental	7.08	1.08	.29	.3859
	Control	6.92	1.08		

in four areas: perceptions of present health, perceptions of health prior to the heart attack, perceptions of health six months from the time of the pretest, and perceptions of the health status of an average individual of the same age and sex as the participant. The mean score for the experimental group's perception of present health was 5.58 and for the control 5.25. There was a difference of 0.33. The standard deviation for the experimental group was 1.24 and for the control, 2.30. The Mann Whitney U of 0.09 indicated that there was no significant difference between the two groups on perception of present health.

The experimental group's mean score for perception of health prior to the heart attack was 6.42 and the control group's was 7.08. The control group's was 0.66 higher. The standard deviation for the experimental group was 1.97 and for the control 2.94. The Mann Whitney U of 1.096 indicated that there was no significant difference between the groups on perception of health prior to the heart attack. Table 2 represents the results of the analysis.

The mean score for the experimental group on perception of health six months from now was 6.64 and for the control group 6.25. The standard deviation for the experimental group was 1.31 and for the control, 2.09. There was no significant difference between the two groups on perceptions of health six months from now as indicated by the Mann Whitney U of 0.06. Table 2 represents the results of the

analysis.

On the perception of health of an average individual of the same age and sex as the participant, the mean score of the experimental group was 7.08 and the control, 6.92. There was 0.16 difference. The standard deviation for the experimental and control groups were identical, 1.08. The Mann Whitney U of 0.29 indicated that there was no significant difference in this perception. Table 2 represents the results of this analysis.

The results of the analyses indicated that the experimental and control groups were initially similar in the pretest on knowledge, anxiety, and health perception. Thus, any differences in the post test scores could be attributed to the Alberta Heart Foundation's Coronary Rehabilitation Program.

Post-Test Scores

To test the first hypothesis that as a result of program participation, there would be a greater increase in the participant's knowledge post test scores than in the knowledge post test scores of the non-participants, the scores were analyzed by the Mann Whitney U for significance of difference. Table 3 represents the results of that analysis. There was no significant difference between the groups on the Section V, the knowledge tests. Thus the first hypothesis was not supported.

Table 3. Means, Standard Deviations, and Mann Whitney U Values for Post-Test Scores

Dependent Variables	Group	x	S.D.	Mann Whitney U	p
Knowledge	Experimental	26.75	5.55	.38	.3520
	Control	25.75	4.22		
Anxiety	Experimental	17.33	7.60	.49	.3121
	Control	17.25	9.62		
Perceptions of present health	Experimental	6	1.04	.09	.4641
	Control	5.75	1.91		
Perceptions of health prior to heart attack	Experimental	6.5	1.24	1.91	.0281
	Control	7.42	2.15		
Perceptions of health in six months	Experimental	7	1.34	1.29	.0985
	Control	6.73	1.70		
Perceptions of health of average individual	Experimental	6.92	1.08	.49	.3121
	Control	7.17	0.84		

For the experimental group, the mean knowledge score of 26.55 was one point higher than that of the control group. The standard deviation for the experimental group was 5.55 and for the control group, 4.22.

The second hypothesis predicted that as a result of program participation, there would be a greater decrease in the participant's anxiety post test scores than in the anxiety post test scores of the non-participants. The scores on the Taylor Manifest Anxiety Test (Section IV) were analyzed by the Mann Whitney U and there was no significant difference between the groups. Table 3 represents the results of the analysis. The second hypothesis was not supported.

The experimental group's mean anxiety score of 17.33 was 0.08 points higher than that of the control group. The standard deviation for the scores in the experimental group was 7.60 while that for the control group was 9.92.

The third hypothesis predicted that as a result of program participation, there would be a greater increase in the participants' "perception of his present health" post test scores than in the "perception of present health" post test scores of the non-participants (Question 1, Section III). The scores were analyzed using the Mann Whitney U and there was no significant difference between the two groups. Table 3 represents the results of the analysis. The third hypothesis was not supported. The experimental

group's mean "perception of present health" score of 6.00 was 0.25 greater than that of the control group. The standard deviation of the experimental group's scores was 1.04 while that of the control group's was 1.91.

The fourth hypothesis predicted that as a result of program participation, there would be a greater increase in the participants' "perception of his health prior to his heart attack" post test scores than in the "perception of his health prior to his heart attack" post test scores of the non-participants, (Question 2, Section III). The scores were analyzed using the Mann Whitney U and there was a significant difference between the two groups. The control group's "perception of health prior to the heart attack" scores were significantly higher than those of the experimental group. Table 3 represents the results of this analysis. The fourth hypothesis was supported.

The mean score of "perception of health prior to the heart attack" for the experimental group was 6.5 and this was 0.92 lower than the mean score of the control group. The standard deviation for the experimental group was 1.24 and for the control group, 2.15.

The fifth hypothesis predicted that as a result of program participation there would be a greater increase in the participants' "perception of his health in six months" post test scores of the non-participants (Question 3, Section III). The scores were analyzed

using the Mann Whitney U and there was no significant difference between the two groups. Table 3 represents the results of the analysis. The fifth hypothesis was not supported.

The mean score of "perception of health of an average individual of the same age and sex" for the experimental group was 6.92. This was 0.25 points lower than the mean score for the control group. The standard deviation for the experimental group was 1.08 and for the control group 0.84.

The sixth hypothesis predicted that as a result of the program participation, there would be a greater increase in the participants' "perception of health of an average individual of the same age and sex" post test scores than in the "perception of the health of an average individual of the same age and sex" post test scores of the non-participants (Question 4, Section III). The scores were analyzed using the Mann Whitney U and there was no significant difference between the two groups. Table 3 represents the results of the analysis. The sixth hypothesis was not supported.

Stage Two Analysis

The dependent variables (knowledge, anxiety, health perception) were analyzed to assess their effect on each other. If the dependent variables were associated, then this would indicate that the scores on the post tests may have been affected by the interaction between the

dependent variables as well as by the Coronary Rehabilitation Program. The Fisher Exact Probability test was used to determine the association between: knowledge and anxiety, knowledge and perceptions of present health (present H. P.), anxiety and perceptions of present health, perceptions of present health and perceptions of health prior to the heart attack (post H. P.), perceptions of present health and perceptions of health six months from now (future H. P.), and perceptions of present health and perceptions of the health of an average individual of the same age and sex (H. P. of average individual). The analysis was done on post test scores. Tables 4 through 9 represent the configurations used for the experimental group and Tables 10 through 15 represent the control group.

Table 4. Relationship of Knowledge to Anxiety - Experimental Group

		Knowledge		
		Low	High	
Anxiety	High	1	2	3
	Low	3	6	9
		4	8	

Table 5. Relationship of Knowledge to Perceptions of Present Health - Experimental Group

		Knowledge		
		Low	High	
Present Health Perception	Low	3	4	7
	High	1	4	5
		4	8	

Table 6. Relationship of Anxiety to Perceptions of Present Health - Experimental Group

		Anxiety		
		Low	High	
Present Health Perception	Low	7	2	9
	High	2	1	3
		9	3	

Table 7. Relationship of Perception of Present Health to Perception of Health Prior to the Heart Attack - Experimental Group

		Present Health Perception		
		Low	High	
Past Health Perception	Low	4	2	6
	High	2	4	6
		6	6	

Table 8. Relationship of Perception of Present Health to Perception of Health in Six Months - Experimental Group

		Present Health Perception		
		Low	High	
Future Health Perception	Low	4	0	4
	High	2	5	7
		6	5	

Table 9. Relationship of Perception of Present Health to Perception of the Health of an Average Individual of the Same age and Sex - Experimental Group

		Present Health Perception		
		Low	High	
Health Perception of Average Individual	Low	4	1	5
	High	3	4	7
		7	5	

Table 10. Relationship of Knowledge to Anxiety - Control Group

		Knowledge		
		Low	High	
Anxiety	High	2	1	3
	Low	3	6	9
		5	7	

Table 11. Relationship of Knowledge to Perceptions of Present Health - Control Group

		Knowledge		
		Low	High	
Present Health Perception	Low	3	4	7
	High	2	3	5
		5	7	

Table 12. Relationship of Anxiety to Present Health - Control Group

		Anxiety		
		Low	High	
Present Health Perception	Low	5	3	8
	High	3	1	4
		8	4	

Table 13. Relationship of Perception of Present Health to Perception of Health Prior to the Heart Attack - Control Group

		Present Health Perception		
		Low	High	
Past Health Perception	Low	2	1	3
	High	6	3	9
		8	4	

Table 14. Relationship of Perception of Present Health to Perception of Health in Six Months - Control Group

		Present Health Perception		
		Low	High	
Future Health Perception	Low	5	0	5
	High	3	4	7
		8	4	

Table 15. Relationship of Perception of Present Health to Perception of the Health of an Average Individual of the Same Age and Sex - Control Group

		Present Health Perception		
		Low	High	
Health Perception of Average Individual	Low	3	0	3
	High	5	4	9
		8	4	

Low knowledge was a score of 25 or lower while high knowledge was a score of 26 or greater. Lower anxiety was a score of 25 or lower and high anxiety was a score of 26 or greater. Perception of Health was low if the rating was 6 or less and high if the rating was 7 or greater.

In determining the relationship of knowledge to anxiety in the experimental group, the Fisher Exact Probability yielded 0.509 and in the control group, 0.318. This indicated that there was no significant association between knowledge and anxiety in either the experimental or control group. Tables 4 and 10 represent the data.

In determining the relationship of the knowledge to perceptions of present health in the experimental group, the Fisher Exact

Probability yielded 0.353 and in the control group, 0.442. This indicated that there was no significant association between knowledge and perceptions of present health in either the experimental or control group. Tables 5 and 11 represent the data.

In determining the relationship of anxiety to perceptions of present health in the experimental group, the Fisher Exact Probability yielded 0.491 and in the control group, 0.453. This indicated that there was no significant association between anxiety and perceptions of present health in either the experimental or control group. Tables 6 and 12 represent the data.

In determining the relationship of perception of present health to perception of health prior to the heart attack in the experimental group, the Fisher Exact Probability yielded 0.244 and in the control group, 0.509. This indicated that there was no significant association between perception of present health and perception of health prior to the heart attack in either the experimental or control group. Tables 7 and 13 represent the data.

In determining the relationship of perception of present health to perception of health in six months in the experimental group, the Fisher Exact Probability yielded 0.045 and in the control group, 0.071. In the experimental group, there was a significant association between perception of present health and perception of health in six months. Individuals who perceived their present health status as

high, perceived their health to be high in six months. Individuals who perceived their present health to be low, also perceived their health to be low in six months from now. Although this association is not noted in the control group, there does appear to be a similar trend ($p = .071$). Tables 8 and 14 represent this data.

In determining the relationship of present health to perception of the health of an average individual of the same age and sex in the experimental group, the Fisher Exact Probability yielded 0.221 and in the control group, 0.255. This indicated that there was no significant association between perception of present health and perception of the health of an average individual of the same age and sex in either the experimental or control group. This data is illustrated in Tables 9 and 15.

Chapter 5

DISCUSSION

The literature review suggested that maladaptive behaviors of myocardial infarction patients often interfered with their recovery and rehabilitation. To assist patients and their families in the rehabilitation process, a variety of programs have been implemented. Previous research reported that cardiac patient education programs were usually associated with an increase in knowledge regarding the disease and treatment, a decrease in anxiety, and an increase in the participant's perception of his health. The majority of cardiac education programs which have been evaluated have been those which were conducted while the individuals were in hospital. There has been little or no evaluation of the relative long term effects of these programs.

The present study was in contrast with previous research since there was little or no change in knowledge, anxiety or perception of health. These findings could have been a result of the length of time since the individual had a myocardial infarction. Time itself may have provided the necessary component for adjustment. According to Edgett and Porter (1980), the third phase of a comprehensive approach to cardiac rehabilitation is a long term supervised conditioning and maintenance program. Individuals participating in this program may

have had sufficient knowledge, a lowered level of anxiety, and a positive perception of their health compared to individuals who had a myocardial infarction within the past twelve months. The length of time since the myocardial infarction was not identified.

Age has been significantly correlated with knowledge achievement and previous studies have indicated that older patients are less likely to achieve a higher score in knowledge than younger patients. Although this study showed no relationship between anxiety and knowledge or health perception this may have been due to the age factor. Fifty percent of the subjects in this study were sixty years or older.

Although anxiety was measured, two other maladaptive behaviors, denial and depression, were not measured. These may have been present in the participants and may have been of greater significance than anxiety, especially amongst the male participants.

Return to work as a measure of rehabilitation and improved perception of health was not analyzed as 60 percent of the participants were retired. No measure of physical activity was included in the questionnaire and this might have been beneficial in analyzing the findings.

The significant increase in the control group's "perception of health prior to the heart attack" post-test scores as compared to the experimental group's post-test scores may have been due to the amount

of media input into the decision. If the members of this group were avid television viewers, they might have compared their health status prior to the heart attack to the advertisements reflecting the health status of individuals who exercise and eat appropriately. This comparison may have indicated that their health status prior to the heart attack was comparable to those depicted in the advertisements.

The pre-test may have caused the control group to reflect more on their prior health status. Discussion with family members and friends may have affected how they viewed their past health. If positive reinforcement was received regarding their "good" health prior to the heart attack, the control subjects might have gained a more positive view of their past health.

The demonstration of a significant association between perception of present health and perception of health in six months in the experimental group may have indicated that if individuals have a positive picture of their present health, they look forward to the future. Although a significant relationship was not identified in the control group, a trend was demonstrated (See Table 15). If numbers of subjects were increased, this trend might become significant.

Participation from the control group was high. Other than for death or hospitalization, participants completed both questionnaires and returned them to the researcher within the allotted time. This may indicate high motivation and concern for improved health care

delivery to recovering cardiac victims. Participants may also have been stimulated to do some reading regarding cardiovascular disease, its treatment and the preventive aspects prior to completing the questionnaires. The high returns may also indicate that spouses, families, or significant others may have encouraged the heart patient to participate in the study. This may indicate high psychosocial support of the victim.

As the findings were not significant, it may have been that the tools for measuring the independent variables were inappropriate or that the program content did not meet the needs of the participants. The effects of pre-testing on the post-testing in the control group may have been highly significant. The participants in the control group may have done extensive reading or questioning following the pre-test. In addition, the teacher-learner relationship in the classes may have significantly affected the participants' ability and motivation to learn.

Summary

Within the limitations of the study, the results of the data analyses indicated that the April 1981 Alberta Heart Foundation Coronary Rehabilitation Programs did not show a significant increase in the participants' knowledge of cardiovascular disease and its preventive aspects, a significant decrease in the participants'

feelings of anxiety, and a significant increase in the participants' perception of his health. The second stage of the analyses indicated that there was no significant association between the dependent variables: knowledge, anxiety, and perception of present health. This analysis also indicated that there was no association in either the experimental or control group between perception of present health and perception of health prior to the heart attack nor of perception of present health and perception of the health of an average individual of the same age and sex. In the experimental group, there was a significant association between perception of present health and perception of health in six months.

Limitations

The purpose of this study was to evaluate the immediate effectiveness of the Alberta Heart Foundation's Coronary Rehabilitation Program on the participants' level of knowledge of cardiovascular disease and its preventive aspects, feelings of anxiety, and health perceptions. In conducting this study, the following were considered to be limitations:

1. The small sample size and lack of random selection limited the ability to generalize to a larger population.
2. Individuals self-selected themselves into the Alberta Heart Foundation Coronary Rehabilitation Program, and it may be this selection criterion itself which influenced the findings of this study.

3. The control group was selected from Southern Alberta while the experimental group was selected from program participants in Southern and Central Alberta.
4. Social desirability has been identified as a factor which might affect the selection of responses on the Taylor Manifest Anxiety Scale particularly so for male participants.
5. Spouses and/or family members or friends may have assisted program participants in completing the post-test.
6. Spouses and/or family members or friends of the control group may have assisted or completed pre-tests and post-tests.
7. Only the spring program was evaluated. The fall program participants may have been different.
8. The length of time since the myocardial infarction occurred varied. The time factor may have affected how individuals responded on the pre-tests and post-tests.
9. Subjects in the control group completed both tests at home while those in the experimental group completed the pre-test in class and the post-test at home.
10. The number of myocardial infarctions and the severity of the infarctions were not identified and these variables may have affected the individuals' responses on the Taylor Manifest Anxiety Scale and on the health perceptions scale.
11. Each program, Lethbridge and Red Deer, had different instructors for each of the classes.
12. Each program was conducted in a different environment.

Recommendations

Based on the findings and limitations noted in this study, the study should be repeated. Each program during a one year period, could be evaluated individually and the results compiled to give an

overall picture of the immediate effectiveness of the program.

Generalizability of the results to a larger population could occur if a larger sample size was used. In addition, the larger sample size would allow other factors to be identified which could be associated with successful rehabilitation. These might include age, success and/or length of marriage, concern of family members, amount and type of psychosocial support, and relationships with health professionals, and availability of support services.

This study does not lend support to the need to identify the learning needs of cardiac patients and their families in the post hospital phase. Results of structured and unstructured programs in hospitals and physicians' offices need to be shared with individuals and agencies who are planning and implementing preventive programs. Those responsible for health care delivery need to prevent duplication of services and make the best use of finances available.

The fact that individuals continue to support the Alberta Heart Foundation Coronary Rehabilitation Program and that there was high participation in the control group, reaffirms the value of patient education. It should be provided for patients and their families to continue their education when they see a need.

Studies are needed to demonstrate the ideal time to teach certain topics and which programs are best suited to specific times in the rehabilitation process. In addition, health professionals need to

evaluate the relationship between programs and increased compliance and how this is related to the quantity and quality of life.

Descriptive studies are needed to identify why individuals drop out of current programs. The long term benefits of programs also need to be identified. Further work needs to be done in developing tools and methods for evaluating programs.

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APPENDICES

Appendix A. Copy of the Alberta Heart Foundation Coronary
Rehabilitation Course - Lethbridge

All Sessions will be held at: Lethbridge Municipal Hospital,
Galt Residence, Classroom No. 1,
10th Avenue & 18 Street South.

Cost: \$5.00 per couple for entire course
Preregistration preferred Phone: 320-3323

Monday, April 13, 1981
7:30 p.m.

INTRODUCTION
WHAT IS A HEART ATTACK?

Speakers

Rene Arsené, R. N. Intensive Care Nursing
Coordinator, Lethbridge Municipal
Hospital

Richard Gordon, Intensive Care Unit Nurse,
St. Michael's Hospital

Monday, April 20, 1981
7:30 p.m.

HOW TO GET HELP
STRESS AND HEART DISEASE
RELAXATION EXERCISES

Speakers

Geri Knibbs, R. N. Health Nurse, Lethbridge
Community College

Tom Karren, Instructor, Lethbridge Community
College

Monday, April 27, 1981
7:30 p.m.

DIET AND HEART DISEASE
RELAXATION EXERCISE PRACTISE

Speakers

Rosemary Otrhalek-Smith, Dietician,
Lethbridge Municipal Hospital

Joanne Wishart, Health & Infection Control
Nurse, St. Michael's Hospital

Monday May 4, 1981
7:30 p.m.

HEART MEDICINES
RELAXATION EXERCISE PRACTISE

Speakers

John Brown, Pharmacist, Lethbridge Municipal
Hospital

Susan Kurjanczyk, R. N. Intensive Care
Lethbridge Municipal Hospital

Monday May 11, 1981
7:30 p.m.

SEX AND HEART DISEASE
PSYCHOLOGICAL ASPECTS OF HEART DISEASE

Speakers

Terri Forbis, Family Planning Coordinator,
Family Planning Centre

Dr. Sig Balfour, Internist, Campbell Clinic

Monday May 25, 1981
7:30 p.m.

EXERCISE AND HEART DISEASE
JOB ALTERNATIVES

Speakers

Dr. Keith Happel, Internist, Campbell Clinic

Career Consultant, Alberta Career Centre

Appendix B. Copy of the Alberta Heart Foundation Coronary
Rehabilitation Course - Red Deer

All Sessions will be held at: Red Deer Regional Hospital Centre
Conference Room A, 3942 - 50 A Avenue
(See attached map)

Cost: \$ 5.00 per couple for entire course
Preregistration is required

Phone: 347-1303

Wednesday, Apr.22/81
7:00 p.m.

INTRODUCTION
"HEART ATTACK! WHAT NOW?"
STRESS RELAXATION EXERCISES

Speakers

Linda Moore, R. N.
Marilynne Pilkington, R. N.
Susan Allison, R. N.

Wednesday, Apr.29/81
7:00 p.m.

STRESS AND HEART DISEASE
RELAXATION EXERCISE PRACTISE

Speakers

Sandy Harper-Jacques, R. N.
Susan Allison, R. N.

Wednesday, May 6/81
7:00 p.m.

EXERCISE AND THE HEART
RELAXATION EXERCISE PRACTISE

Speakers

Dr. R. S. Rigby, Family Physician
Tammy Duizer, R. N.

Wednesday, May 13/81
7:00 p.m.

DIET AND HEART DISEASE
RELAXATION EXERCISE PRACTISE

Speakers

Leah Boulter, Dietician
Susan Allison, R. N.

Wednesday, May 20/81
7:00 p.m.

HEART MEDICINES
RELAXATION EXERCISE PRACTISE

Speakers

Ken Hargreaves, Pharmacist
Karen Fisher, Pharmacist
Tammy Duizer, R. N.

Wednesday, May 27/81
7:00 p.m.

PSYCHOLOGICAL ASPECTS OF HEART DISEASE
SEX AND THE HEART PATIENT
PANEL DISCUSSION

Speakers

Dr. Bruce Handley, Psychologist
Annette Stanwick, R. N.
Dr. M. Thain, Ms. R. Douglas, R. N.; et al

Appendix C. Copy of the Letter Sent to Lethbridge Municipal Hospital

January 7, 1981.

Mr. A. Andreachuk,
Administrator,
Lethbridge Municipal Hospital,
Lethbridge, Alberta.

Dear Mr. Andreachuk:

I am a graduate student in the School of Nursing, Montana State University. As part of my requirements for a Master of Nursing degree, I am assisting the Alberta Heart Foundation in evaluating their Coronary Rehabilitation Program. My thesis will be concerned with the effects of the program on cardiac patients' anxiety, knowledge and health perceptions.

Patients who have had a myocardial infarction and who are attending the Coronary Rehabilitation Program in Lethbridge and Red Deer will be included in the experimental group. It is hoped that the central group could be selected from the medical records at the Lethbridge Municipal Hospital.

I would appreciate access to the medical records at the Lethbridge Municipal Hospital. Once the sample is selected, individuals will be contacted by mail and asked to consider participating in the study. A consent/information form and questionnaire will be included in the envelope. Individuals will have the right to refuse to participate or drop out of the study at any point without any repercussions. The consent/information form will be removed by me prior to sending the questionnaire for compilation of the data.

I have written to Dr. K. Happell, Chief of Medicine, Lethbridge Municipal Hospital, informing him of the study and requesting the support of the internists and permission to contact their patients. I have informed him that I have contacted you.

If I can be of any further assistance, please contact me at 327-0577.

Sincerely,

Florence Kubinec, R.N., BScN.,
Graduate Student in Nursing,
Montana State University.

Appendix D. Copy of Letter Sent to Dr. K. Happel

January 7, 1981.

Dr. K. Happell, M. D., F.R.C.P.,
Chief of Medicine,
Lethbridge Municipal Hospital,
Lethbridge, Alberta.

Dear Dr. Happell,

I am a graduate student in the School of Nursing, Montana State University. As part of my requirements for a Mast of Nursing degree, I am assisting the Alberta Heart Foundation in evaluating their Coronary Rehabilitation Program. My thesis will be concerned with the effects of the program on patients' anxiety, knowledge, and health perceptions.

Patients who have had a myocardial infarction and who are attending the Coronary Rehabilitation Program in Lethbridge and Red Deer will be included in the experimental group. It is hoped that the control group could be selected from the medical records at the Lethbridge Municipal Hospital.

I have contacted Mr. Andreachuk regarding permission to utilize medical records in selecting the control group. I would appreciate the internists permission to contact their patients and would appreciate their support in the conduction of the study. Would you please notify Mr. Andreachuk regarding the physicians' decision?

You have my assurance that at no time will the confidentiality of the patient be violated. A consent/information form will be removed by me prior to sending the questionnaire for compilation of data.

If I can be of any further assistance or if you would prefer that I contact the internists individually, please contact me at 327-0577.

Sincerely,

Miss Florence Kubinec, R.N., BScN.,
Graduate Student in Nursing
Montana State University

Appendix E. Copy of Letter from Dr. Happel

THE CAMPBELL CLINIC
430 MAYOR MAGRATH DRIVE
Lethbridge, Alberta
T1J 3M1

January 14, 1981.

Miss Florence Kubinec, RN,
827 - 19 Street South,
Lethbridge, Alberta. T1J 3H3

Dear Miss Kubinec:

At our Medical Committee meeting of this date I read your letter and the internists were quite agreeable to you contacting their patients with regard to your project concerning the coronary rehabilitation program. We would be pleased to have a copy of your conclusions when they are available.

With best regards, and best wishes for the project,

Yours sincerely,

K. R. Happel, FRCP(C).

KRH/jmn

cc - Mr. A. Andreachuk, Administrator,
Lethbridge Municipal Hospital.

Appendix F. Information Letter to Study Participants

Dear Participant:

I am a graduate student in the School of Nursing, Montana State University. As part of the requirements for a Master of Nursing degree, I am working with the Alberta Heart Foundation in evaluating their Coronary Rehabilitation Program. We are asking individuals with heart problems to participate in the evaluation. Individuals who are taking the course and individuals who are not taking the course are participating in the evaluation.

You will in no way be identified in the study. Your identity will be separated from the information you provide. A number will be assigned to you and this number will be placed on the questionnaire. The results of this study will be shared with other health professionals and will be available to you, when the study is completed, at the Alberta Heart Foundation, Calgary.

I hope that you will assist us by completing the enclosed questionnaire, and returning it to me in the enclosed stamped, self-addressed envelope. If you agree to participate, the next questionnaire will follow in approximately six weeks. Please complete these questionnaires independently. It should take approximately forty-five minutes to complete.

If you do not wish to participate, please check the appropriate square on the cover letter and return the same to me in the enclosed stamped, self-addressed envelope. Thank you for your assistance.

Sincerely,

Florence Kubinec, R.N., BScN.

Appendix G. Cover Letter and Pre-Test

I am conducting this study to evaluate the effectiveness of the Coronary Rehabilitation Program as a method of promoting health. This study is approved by the Alberta Heart Foundation and Montana State University, School of Nursing.

I would appreciate your cooperation in the completion of this questionnaire. All information from this questionnaire will remain confidential. Thank you for your assistance.

Sincerely

Florence Kubinec, RN, BScN.

NAME: _____

ADDRESS: _____

PHONE: _____

DATE: _____

Would you be willing to participate in this study? Yes () No ()

QUESTIONNAIRE

Please try to answer all of the questions as each question gives important information about the effects of the program. Although some of the questions will seem difficult to answer, I hope that you will make an "educated guess" for these.

SECTION I

For each question place a check (✓) in the appropriate box.

- *1. I have taken a coronary rehabilitation course before. ☐ Yes
☐ No

- *2. The reason(s) I am taking this course is (are) _____

3. Sex: ☐ Male ☐ Female

4. Age: ☐ 20 - 29 ☐ 50 - 59
☐ 30 - 39 ☐ 60 - 69
☐ 40 - 49 ☐ 70 and over

5. What is your occupation? _____

6. Marital status: ☐ single ☐ widowed
☐ married ☐ divorced
☐ separated ☐ other

7. I have had (check (✓) one or more)
☐ angina ☐ a mild heart attack
☐ a severe heart attack ☐ more than one heart attack
☐ one heart operation ☐ more than one heart operation
☐ other type of heart disease. Please specify _____

8. My spouse is very concerned about my health.
☐ strongly agree ☐ strongly disagree
☐ slightly agree ☐ slightly disagree
☐ don't know

9. Has a relative had
a. heart attack or developed coronary heart disease before age 60? ☐ yes ☐ no
b. stroke? ☐ yes ☐ no
10. Do you have a family history of diabetes? ☐ yes ☐ no
11. Do you have
a. chronic bronchitis or emphysema? ☐ yes ☐ no
b. hypertension (high blood pressure)? ☐ yes ☐ no
c. diabetes? ☐ yes ☐ no
d. Any other troublesome illness? ☐ yes ☐ no
If yes, explain _____

12. I have had a heart problem for
☐ 1 - 6 months ☐ 25 - 30 months
☐ 7 - 12 months ☐ 31 - 36 months
☐ 13 - 18 months ☐ more than 36 months
☐ 19 - 24 months
13. Educational level (check (✓) highest level attained):
☐ under grade 8
☐ some high school
☐ high school diploma
☐ community college/technical institute
☐ some university
☐ university degree
☐ postgraduate degree
- *14. I am on a diet prescribed by my doctor ☐ yes ☐ no
If Yes, what type of diet?
☐ low cholesterol
☐ weight reducing
☐ salt restricted
☐ other (please specify) _____

- *15. I am on a PROGRESSIVE, REGULAR exercise program ☐ yes ☐ no

*16. Smoking:

- a. I am ☐ a smoker; ☐ ex-smoker (stopped);
☐ non-smoker (never smoked)
- b. Enter the average amount smoked per day in the last 5 years or in the last 5 years before quitting
Average number of cigarettes per day _____
Average number of pipes/cigars per day _____
- c. Enter number of years since you stopped smoking _____

*17. Alcohol:

- a. I am ☐ a drinker; ☐ ex-drinker (stopped);
☐ a non-drinker (never drank)
- b. If you drink alcohol, enter the average number of drinks per week
bottles of beer (12 oz.) _____
glasses of wine (4 oz.) _____
shots of spirits (1-1½ oz.) _____

- *18. I have ☐ returned to work full time
☐ returned to work part time
☐ not returned to work

* Questions for Alberta Heart Foundation

SECTION II

In the column below list the medications (drugs) that you presently take that are prescribed by your doctor, and those that you buy over the counter (without a prescription).

<u>Prescription Drugs</u>	<u>Over the Counter Drugs</u>
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____

Circle the number of those drugs (above) that you take for your heart.

SECTION III

Below is a picture of a ladder. The top of the ladder represents perfect health and the bottom of the ladder represents the worst possible health.

9	Best Possible Health
8	
7	
6	
5	
4	
3	
2	
1	
0	Worst Possible Health

Please answer all these questions using this ladder.

1. On which step would you say your health is right now? _____
2. On which step would you say your health was prior to your heart attack? _____
3. On which step would you say your health will be 6 months from now? _____
4. On which step would you say the health of the average individual of your age and sex is? _____

SECTION IV

For each of the following statements, please circle "TRUE" if the statement describes you now, and "FALSE" if it does not. There are no right or wrong answers.

- | | | |
|--|------|-------|
| 1. I do not tire quickly. | TRUE | FALSE |
| 2. I am often sick to my stomach | TRUE | FALSE |
| 3. I am about as nervous as other people | TRUE | FALSE |
| 4. I have very few headaches | TRUE | FALSE |
| 5. I work under a great deal of strain | TRUE | FALSE |
| 6. I cannot keep my mind on one thing | TRUE | FALSE |
| 7. I worry over money and business | TRUE | FALSE |
| 8. I frequently notice my hand shakes when I try to do something | TRUE | FALSE |
| 9. I blush as often as others | TRUE | FALSE |
| 10. I have diarrhea ("the runs") once a month or more | TRUE | FALSE |
| 11. I worry quite a bit over possible trouble | TRUE | FALSE |
| 12. I practically never blush | TRUE | FALSE |
| 13. I am often afraid that I am going to blush | TRUE | FALSE |
| 14. I have nightmares every few nights | TRUE | FALSE |
| 15. My hands and feet are usually warm enough | TRUE | FALSE |

16. I sweat very easily even on cool days	TRUE	FALSE
17. When embarrassed I often break out in a sweat which is very annoying	TRUE	FALSE
18. I do not often notice my heart pounding and I am seldom short of breath	TRUE	FALSE
19. I feel hungry almost all the time	TRUE	FALSE
20. Often my bowels don't move for several days at a time.	TRUE	FALSE
21. I have a great deal of stomach trouble	TRUE	FALSE
22. At times I lose sleep over worry	TRUE	FALSE
23. My sleep is restless and disturbed	TRUE	FALSE
24. I often dream about things I don't like to tell other people	TRUE	FALSE
25. I am easily embarrassed	TRUE	FALSE
26. My feelings are hurt easier than most people	TRUE	FALSE
27. I often find myself worrying about something	TRUE	FALSE
28. I wish I could be as happy as others	TRUE	FALSE
29. I am usually calm and not easily upset	TRUE	FALSE
30. I cry easily	TRUE	FALSE
31. I feel anxious about something or someone almost all the time	TRUE	FALSE
32. I am happy most of the time	TRUE	FALSE
33. It makes me nervous to have to wait	TRUE	FALSE
34. At times I am so restless that I cannot sit in a chair for very long	TRUE	FALSE
35. Sometimes I become so excited that I find it hard to get to sleep	TRUE	FALSE
36. I have often felt that I faced so many difficulties that I cannot overcome them	TRUE	FALSE

- | | | |
|--|------|-------|
| 37. I must admit that I have at times been worried beyond reason over something that really did not matter | TRUE | FALSE |
| 38. I have very few fears compared to my friends | TRUE | FALSE |
| 39. I have been afraid of things or people that I know could not hurt me | TRUE | FALSE |
| 40. I certainly feel useless at times | TRUE | FALSE |
| 41. I find it hard to keep my mind on a task or job | TRUE | FALSE |
| 42. I am more self-conscious than most people | TRUE | FALSE |
| 43. I am inclined to take things hard | TRUE | FALSE |
| 44. I am a high-strung person | TRUE | FALSE |
| 45. Life is often a strain for me | TRUE | FALSE |
| 46. At times I think I am no good at all | TRUE | FALSE |
| 47. I am not at all confident of myself | TRUE | FALSE |
| 48. I sometimes feel that I am about to go to pieces | TRUE | FALSE |
| 49. I don't like to face a difficulty or make an important decision | TRUE | FALSE |
| 50. I am very confident of myself | TRUE | FALSE |

SECTION V

- A. In the following questions, circle the answer which best completes each sentence.
1. The two chambers on the right side of the heart:
 - a. send blood out of the body through the main arteries.
 - b. receive blood from the body and pump it through the lungs.
 2. The coronary circulation:
 - a. brings blood from the lungs to the heart
 - b. bring carbon dioxide to the heart muscle
 - c. brings oxygen to the heart muscle

3. Collateral circulation beings to develop when:
 - a. the coronary arteries become enlarged
 - b. the coronary arteries become narrowed
 - c. you have experienced prolonged periods of stress
 - d. the pulmonary circulation has been congested
4. Coronary atherosclerosis is:
 - a. a complete blockage of blood flow to the heart muscle
 - b. a narrowing of the passageway for the flow of blood to the heart muscle
 - c. a narrowing of the passageway for the flow of blood to the lungs
 - d. a narrowing of the blood vessels returning to the heart
5. A heart attack is defined as:
 - a. a blockage of the pulmonary artery, with no blood supply going to the heart muscle
 - b. a blockage of the pulmonary artery, with no blood goin to the lung
 - c. a blockage of the coronary veins, with no blood going to the right side of the heart
 - d. a blockage of one or more chambers of the heart
- B. The following words describe various factors to which many of us are exposed; if the factor contributes to heart disease, circle the word "YES"; if the factor does not contribute to heart disease, circle the work "NO".

6. Smoking	Yes	No
7. Marital status	Yes	No
8. Diabetes	Yes	No
9. Underweight	Yes	No
10. Passive personality	Yes	No
11. Low cholesterol diet	Yes	No
12. Hot weather	Yes	No
13. Low blood pressure	Yes	No
14. Nationality	Yes	No
15. Age	Yes	No
16. Sleep	Yes	No
17. Occupation	Yes	No

- C. In the following questions, circle the answer which best completes the sentence.
18. After a heart attack, new capillaries begin to form in the damaged heart muscle:
- a. immediately
 - b. on about the fourth day
 - c. about the second week
 - d. a month or so later
19. After a heart attack, the healing process begins and damaged heart muscle is replaced by:
- a. normal heart muscle cells
 - b. stronger muscle cells
 - c. scar tissue
 - d. cartilage
20. The goal of a rehabilitation program after myocardial infarction is to:
- a. safely achieve some physical activity
 - b. safely become productive
 - c. safely control weight
 - d. safely reach the maximum possible level of activity
21. A progressive exercise program after a myocardial infarction is important in order to:
- a. safely maintain body weight
 - b. safely reach a productive level of activity
 - c. speed development of collateral circulation
 - d. find out how much activity you can do
22. A restrictive diet after a myocardial infarction is important in order to:
- a. prevent development of further heart damage
 - b. reduce body weight
 - c. stabilize body weight
 - d. assure adequate nutrition

23. It is important to decrease coronary/myocardial infarction risk factors in order to:

- a. maintain a good level of activity
- b. return to work as soon as possible
- c. reduce the risk of having another heart attack
- d. speed development of collateral circulation

D. Read the following words or phrases; if the word describes a warning symptom of a heart attack, circle the answer "YES" if it is not a warning symptom, circle the word "NO".

24. Sleepiness	Yes	No
25. Pain radiating to the legs	Yes	No
26. Sweating	Yes	No
27. Redness of the face	Yes	No
28. Pain spreading from arms and legs	Yes	No
29. Shortness of breath	Yes	No
30. Sick to your stomach	Yes	No
31. Feeling of peacefulness	Yes	No
32. Hunger	Yes	No

E. The following phrases describe actions; if the action describes what you should do when you feel symptoms of a heart attack coming on, circle the word "YES", if it is not something you should do, circle the word "NO"

33. Call your doctor	Yes	No
34. Wait one hour to see if the symptoms subside	Yes	No
35. Drive yourself to the hospital	Yes..	No
36. Consult a friend or relative	Yes	No
37. Take an antacid to be sure the symptoms are not simply indigestion	Yes	No

- | | | | |
|-----|---|-----|----|
| 38. | Lay down for ten minutes to see if the chest pain is really angina | Yes | No |
| 39. | Eat a light snack to ease the pain | Yes | No |
| 40. | Take a short walk to improve the circulation through the heart muscle | Yes | No |

Appendix H. Post-Test

Please try to answer all the questions as each question gives important information about the effects of the program. Although some of the questions will seem difficult to answer, I hope that you will make an "educated guess" for these.

For each question place a check () in the appropriate box.

- *1. Weight: _____ pounds
- *2. I am on a Progressive Regular exercise program. () Yes
() No
- *3. I utilize the relaxation exercise or some other techniques to relieve stress. () Yes
() No
- *4. Smoking - I am:
() a smoker
 average number of cigarettes/day _____
 average number of pipes/cigars/day _____
 brand of cigarette _____
() ex-smoker (stopped)
 when did you quit smoking? _____
() non-smoker (never smoked)
- *5. Alcohol - I am
() a drinker - enter the average number of drinks per week
 bottles of beer (12 oz.) _____
 glasses of wine (4 oz.) _____
 shots of spirits (1-1½ oz.) _____
() ex-drinker (stopped)
 when did you quit drinking? _____
() non-drinker (never drank)
- *6. I have () returned to work full time
() returned to work part time
() not returned to work
() not planned to return to work

*7 My spouse is very concerned about my health

☐ strongly agree

☐ strongly disagree

☐ slightly agree

☐ slightly disagree

☐ don't know

*8 I am on a diet prescribed by my doctor

☐ Yes

☐ No

If Yes, what type of diet?

☐ low cholesterol

☐ weight reducing

☐ salt restricted

☐ other (please specify) _____

Sections II, III, IV, and V same as Pretest Questionnaire,
Appendix G

* Questions for Alberta Heart Foundation

Appendix I. Cover Letter to Post-Test

Dear Participant:

This is phase two of the evaluation of the Alberta Heart Foundation Coronary Rehabilitation Program. I would appreciate your cooperation in the completion of this questionnaire. Your replies will remain confidential and anonymous.

Sincerely,

Florence Kubinec, R.N., BScN.,
Graduate Student M.S.U.

Date:

Name:

Address:

Phone:

Appendix J. Copy of Letter Sent to Dr. D. A. Bille

February 28, 1981.

Dr. D. A. Bille, R.N., Ph.D.,
Department of Nursing,
DePoul University,
2323 North Seminary Avenue,
Chicago, Ill. 60614

Dear Dr. Bille,

I am a graduate student in the School of Nursing at Montana State University. As part of my requirements for a Master of Nursing degree, I am assisting the Alberta Heart Foundation in evaluating their Coronary Rehabilitation Program. My thesis will be concerned with the effects of the program on cardiac patient's anxiety, knowledge, and health perceptions.

I would appreciate your permission to utilize the questionnaire "Life After a Heart Attack" that appeared in Heart and Lung, 1977, 6 (1), 146-147. I would be pleased to send you a summary of the findings upon completion of the study.

Sincerely,

Miss Florence Kubinec, R.N., BScN.

Appendix K. Copy of Letter from D. A. Bille

DEPAUL UNIVERSITY

Department of Nursing 2323 North Seminary Avenue 312/321-8150
Chicago, Illinois 60614

March 18, 1981

Florence Kubinec, R.N., B.Sc.N.
#2 - 2500 - 12 Ave. S.
Great Falls, Mt. 59405

Dear Miss Kubinec:

It is my pleasure to grant you permission to utilize my questionnaire, "Life After a Heart Attack" as it appeared in Heart and Lung magazine. I am sure that you are already aware that the test is valid as long as the rehab program deals with the same objectives I used (judged to have both content and face validity). The test results also showed a reliability of 0.6443, using Hoyt's method for computing internal consistency. This is fairly satisfactory for making comparisons between groups.

You may be interested in knowing that my text, Practical Approaches to Patient Teaching, is being released by Little, Brown and Co. (Boston), on March 20th. I have taken the liberty of enclosing an order card for your convenience.

If I can be of further assistance to you in your thesis research, please do not hesitate in contacting me. I would very much like to receive a summary or abstract of your research when it has been completed.

Good luck in your educational endeavors at Montana State University. I look forward to hearing more about your thesis.

Sincerely,

Donald A. Bille, R.N., Ph.D.
Associate Professor
Chairman, Graduate Program

Appendix L. Knowledge Scores

KNOWLEDGE SCORES

EXPERIMENTAL GROUP		CONTROL GROUP	
Pretest	Post Test	Pretest	Post Test
26	28	28	21
21	27	21	17
24	20	29	30
28	34	34	27
29	29	28	21
33	27	28	29
25	25	23	27
31	31	20	24
33	31	31	30
33	33	24	29
19	17	26	25
26	19	27	29

Appendix M. Anxiety Scores

ANXIETY SCORES

EXPERIMENTAL GROUP		CONTROL GROUP	
Pretest	Post Test	Pretest	Post Test
13	8	27	29
30	27	20	27
22	16	19	11
13	17	6	9
8	10	5	4
19	15	14	11
9	13	8	11
25	19	7	11
14	27	9	14
4	6	29	31
23	21	38	33
33	29	14	16

Appendix N. Health Perception Scores

HEALTH PERCEPTION SCORES

A PRESENT HEALTH PERCEPTION

EXPERIMENTAL GROUP		CONTROL GROUP	
Pretest	Post Test	Pretest	Post Test
8	8	3	4
5	7	9	8
5	5	7	6
5	6	6	7
5	4	7	7
6	7	4	5
6	8	4	6
5	6	5	5
5	3	6	8
8	8	6	6
4	4	0	1
5	6	6	6

B HEALTH PRIOR TO HEART ATTACK

EXPERIMENTAL GROUP		CONTROL GROUP	
Pretest	Post Test	Pretest	Post Test
9	8	8	8
3	7	9	9
5	5	9	9
5	5	2	6
7	8	9	9
4	8	6	5
8	5	7	7
9	6	7	8
7	5	9	9
8	7	2	2
5	7	9	9
7	7	8	8

C IN SIX MONTHS

EXPERIMENTAL GROUP		CONTROL GROUP	
Pretest	Post Test	Pretest	Post Test
8	8	3	4
5	8	9	8
5	6	8	7
6	7	7	7
6	8	8	7
8	8	7	6
8	8	5	6
5	6	5	5
7	4	7	8
9	8	7	7
-	-	2	2
6	6	7	7

D AVERAGE INDIVIDUAL OF SAME AGE AND SEX

EXPERIMENTAL GROUP		CONTROL GROUP	
Pretest	Post Test	Pretest	Post Test
8	6	6	7
9	8	8	8
6	6	6	6
6	7	7	7
6	8	8	8
8	8	8	8
8	8	8	7
7	7	7	6
6	6	6	8
8	8	8	7
7	5	5	6
6	6	6	8

Cardiac patient education and

Cardiac patient
education and its
relationship to...

N378
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Cap 2