

**NURSES' PERCEPTIONS OF THE INFORMATION NEEDS OF
POST-MYOCARDIAL INFARCTION PATIENTS DURING
HOSPITALIZATION**

SUBMITTED BY: TRUDY MICHELLE NERNBERG

**A Thesis presented to the Faculty of Graduate Studies
In partial fulfillment of the requirements
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**Nurses' Perceptions of the Information Needs of Post-Myocardial Infarction
Patients During Hospitalization**

BY

Trudy Michelle Nernberg

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree**

of

MASTER OF NURSING

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ABSTRACT

The purpose of this study was to describe nurses' perceptions of which information post-myocardial infarction (MI) patients would find most helpful regarding their condition and recovery. The perceptions of two groups of nurses working in a community hospital were compared: nurses in the Intensive Care Unit (ICU) and nurses on the medical ward (3N). Results were also compared to those obtained in a similar study which sought the perceptions of post-MI patients themselves (deLeon-Demareé, Savage and Kilpatrick, in press).

Information items were selected from the Heart Attack Book (HAB), a publication of the Heart and Stroke Foundation of Manitoba. The Q-sort procedure was utilized with 10 nurses from each setting. Sixty (60) information items were sorted into seven (7) categories: a Likert-type scale of "Most Helpful" to "Least Helpful" which included a central "Uncertain" category. The number of items placed into each category was pre-determined by the Q-sort procedure. The method utilized in this work was identical to that in the deLeon-Demare et al study, for ease of comparison.

The findings of the study revealed that both groups of nurses agreed on several information items to be "Most Helpful". The items could be summarized by the category "Actions for Survival". Examples are: "What the signals of a heart attack are"; "What actions I should take if signals of a heart attack occur"; "When I should take 'nitro'"; "How I should take 'nitro'"; and "When an ambulance should be called". ICU nurses classified items with Anatomy & Physiology information: "What a heart attack is"; "What causes chest pain" in the Most Helpful category. 3N nurses in contrast, rated Self Care information in this category: "What symptoms I should call my doctor for"; "What to do if I forget to take my medication(s)".

The "Least Helpful" items for both groups of nurses were those pertaining to "Risk Factor Modification" information: "Tips to reach my goal weight"; "Tips to manage my activities when the weather is hot or cold". Several "General Information" items

were also included in this category: "What other tests my doctor may order in the weeks to come"; "That 'nitro' are not habit forming". Differences between the two nursing groups were minor. All items ranked as "Least Helpful" could be grouped under the "Risk Factor" and "Activity" categories.

The item categorized as "Undecided" most frequently was "How I can tell if my blood pressure is high". The groups agreed on the ranking of this item.

The results obtained in this study were compared with the patient results and three similar studies from the 1980's for a historical perspective. Nurses were found to be currently applying knowledge from the latter findings. The de Leon-Demaré et al. results, which measured the perceptions of post-MI patients in Manitoba from 1992-1995 apparently were not being utilized by these research subjects. The lack of congruence in HAB item ranking between nurses and patients has implications for nursing in the areas of education, practice and further research.

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CHAPTER ONE: STATEMENT OF THE PROBLEM

1.0 Introduction

Historically, professional nurses have been required to wear a number of different hats, to perform competently a variety of technical, psychosocial, educational and organizational skills. Above all, they have been asked to pull together artfully all their activities and perform them to meet the varied human needs of individual patients (Ryan, 1987). Among the activities, patient education is the most critical, as it promotes independence in an otherwise dependent patient (Nelson, Baer and Sleveland, 1998). Nursing leaders in the nineteenth century saw the importance of teaching families about sanitation, cleanliness and care of the sick, since much of the care at that time was given by the family (Redman, 1993). Nightingale (1932) supported such education as a way of "...putting the patient's constitution in such a state that it will have no disease or can recover from disease" (Redman, 1993, p.725). This tradition was carried over into the struggles against poverty and disease suffered by new American immigrants (Redman, 1993). The 1960s and 1970s witnessed a resurgence in patient education, due to a renewed world emphasis on health, new developments in the field of rehabilitation after World War II requiring teaching, an increase in long-term illness and disabilities that had to be managed, and because of a change in mood towards authority, particularly physicians (Brandt, 1991). Additional factors included: increased patient demands for knowledge, legal pressures (especially in the USA), promotion of self-care, and earlier hospital discharges (Luker and Caress 1989, Visser 1998). Nurses have embraced the patient education function, indeed it has become a legislated professional responsibility of nurses, incorporated into the National League for Nursing's Model Nurse Practice Act (Rankin and Duffy, 1990). The Canadian Nursing Association likewise, endorses this activity for nurses (1994).

One important area of patient education as an integral component of care occurs following a myocardial infarction (MI) (Chan, 1990). These patients require information to manage the immediate postdischarge period safely and to make informed decisions about potential life-style changes (Duryee, 1992; Garding, Kerr and Bay, 1988).

A multiplicity of research studying the effectiveness of post MI teaching programs has been completed to date. The majority of studies evaluate teaching effectiveness in terms of an increase in patient knowledge (Davis, Sullivan and Tan, 1995; Deberry, Lennier and Light, 1975; Fletcher, 1987; Grady, Buckley, Cisar, Fink and Ryan, 1988; Hentinen, 1986; Liddy and Crowley, 1987; Mills, Barnes, Rodell and Terry, 1985; Murphy, Fishman and Shaw, 1989; Rahe, Scalzi and Shine, 1975). Other studies compare outcomes (knowledge gained) between different patient education programs (Barbowicz, Nelson, DeBusk and Haskell, 1980; Bille, 1977; Garding, Kerr and Bay, 1988; Raleigh and Odothan, 1987; Scalzi, Burke and Greenland, 1980; Sivarajan, Newton, Almes, Kempt, Mansfield and Bruce, 1983; Steele and Ruzicki, 1987). Information to be taught is laid out in a prescriptive fashion, with little consideration for learning needs of individual adult patients (Boyd and Citro, 1988; Crist, 1987; Gibson, 1987; Meloche, 1985; Wood, 1990). Oberst (1989) notes that most of these are studies are 'norm-referenced'. The concern with this is that each piece of information is weighted equally. Oberst argues that certain components of post-MI education are more valuable to the patient than others. Norm-referenced measures of knowledge do not differentiate between valuable and trivial knowledge gain for the patient (Oberst, 1989).

Additionally, a demonstrated increase in knowledge does not necessarily correlate with an increase in application of that knowledge to the patient's life situation (Bille, 1977; Fielding, 1987; Hentinen, 1986; Jordan-Marsh, Gilbert, Ford and Kleeman, 1984; Linde and Janz, 1979; McGovern and Rodgers, 1986; Scalzi et al, 1980; Sivarajan et al,

1983; van-den-Borne, 1998). Patients have demonstrated an acquisition of knowledge in testing, yet fail to demonstrate any change in their behaviors in order to prevent or delay a second MI. The reason for this according to Gerard and Peterson (1984) is that there is an incongruence of expectations between the teacher(s) and the patient(s). Nurses are following prescribed teaching programs in educating the post MI patient. Patients are not receiving information which they perceive to be most important for themselves. Consequently, patients gain knowledge from the nurses, but do not utilize the information in their lives. They seek more valued knowledge from other sources, sources which are not necessarily reliable or valid providers of such information (Hentinen, 1986).

1.1 Research Problem

To date, little scientific data exist on the topic of differing nurse - patient perceptions of important or critical knowledge for the post MI patient. The pioneering study by Gerard and Peterson (1984) demonstrating nurse - patient disagreement has been replicated in post MI patients by Karlick and Yarcheski (1987) with similar results. In various other patient populations, studies have demonstrated differing values allotted to information being provided. Lauer, Murphy and Powers (1982) discovered that nurses and cancer patients held conflicting perceptions of the patients' learning needs. Hemodialysis patients and their nurses also differed on which information items were most important for the patient to learn (Goddard and Powers, 1982). In the recent decade, no published studies have been identified demonstrating whether patients are receiving the information they desire to learn post MI.

Myocardial infarction affects thousands of Canadians every year. In 1997-98, 2,080 Manitobans were admitted to hospitals with the diagnosis of acute myocardial infarction (Manitoba Health, 1999). Coronary artery disease, the usual precursor to MI, is the number one cause of death in Canada (Heart and Stroke Foundation of Canada,

1995). Survivors are prone to future MI (Fielding, 1987; Carlsson, Lindberg, Westin and Israelsson, 1997), and education of the patient to make certain lifestyle changes is viewed as one means to lessen the chances of MI recurring (King, Martin, Morrell, Arena and Boland, 1986; Chan, 1990; Hanish, 1993).

Each institution provides a prescribed regimen of cardiac teaching for post MI patients, utilizing the Heart Attack Book (HAB) produced by the Cardiac Education Committee of the Heart and Stroke Foundation of Manitoba. Content covered in this book is intended to prepare patients to assume responsibility for the management of their disease, and includes anatomy and physiology of the heart, risk factors, symptom management, diet, activity, medications, and stress management. A multi-disciplinary team approach to teaching is utilized by most facilities. Teaching spans the patient's stay in the coronary care unit (CCU) through to discharge. Both MI patients and their significant others are included whenever possible.

The average length of stay for MI patients in 1991 ranged from 9 to 17 days in Manitoba. Since that time, there is a demonstrated trend toward shorter lengths of hospital stay for all patients, including those post-MI. The most recent data available, 1997-98, indicate this time period is now 8.2 to 11.2 days (Manitoba Health, 1999). Bed closures, staff cut-backs, and program deletions continue to occur in the present health care climate. Multi-disciplinary team members, among them nurses, have fewer available contact hours with the patient during a shortened hospital stay. This has implications for the teaching these patients and families receive. Additionally, studies have demonstrated the limited effectiveness of teaching patients complex information for long-term health management while they are still acutely ill. Retention of information is severely limited in these situations (Scalzi, 1980; Burke, 1981; Edwardson, 1988). Teaching time must be used efficiently and effectively to ensure patients and families have the information they need to survive at home.

Patient education programs need to be evaluated in terms of their cost-effectiveness and benefits to patients if they will continue to be supported in these economic times. Realistic timing and content that is valued by the patient need to be identified.

CHAPTER TWO: REVIEW OF THE LITERATURE

2.0 Introduction

Relevant literature from North America and the United Kingdom is reviewed and focuses on pertinent interdisciplinary writings regarding patient education from education, medicine and nursing. The majority of the studies centred on the definition of patient education, and the role of nurses as patient educators. Less common were studies measuring patients' acquisition of knowledge from patient education programs, and studies that compare the effectiveness of various cardiac teaching programs. Least numerous were studies that compared nurses' and patients' perceptions of what information was most important for the patient to learn post MI.

2.1 Patient Education Defined

The literature on patient education is both research and non-research based. Much of the non-research based literature is prescriptive in nature, and purports to give firm guidance on 'how to do' patient education as a process (Rankin and Duffy, 1990; Redman, 1975). It is referred to as paralleling the nursing process in terms of its stages (Springhouse, 1989; Redman, 1983; Cresia, 1996). Ideally, its purpose is to reduce dependency of the patient on the health-care system (Wasson and Anderson, 1994). "Patients have to make their own decisions, and it is the teaching role that enables people to make better decisions" (Sandrick, 1998).

Various authors provide working definitions of patient education. Cresia (1996) defines patient education as a process assisting people to learn and incorporate health-related behaviors into everyday life. Smith (1989) describes learning as a change in behavior and defines patient education, therefore, as a process of assisting people to change behavior. Other authors describe attitudinal and value change as also being important (Garity, 1996; Ryan, 1987). Overall, many of these definitions are developed

by authors with backgrounds in nursing education, who import mainstream educational principles into patient education (Luker and Caress, 1989).

2.2 Nurses as Patient Educators

Patient teaching is to nursing care as flour is to cake. Each...is so essential in their respective processes that without them the outcome is unsatisfactory. High quality ingredients are another essential requirement for both...the better the teaching skills of nurses, the more likely patients are to learn

Gessner, 1989, p.589

As early as 1918, the National League for Nursing Education in the USA recognized the importance of health teaching by nurses (Cohen, 1981). A resurgence of interest in this role for nurses was noted in the 1960s and 1970s (Redman, 1983). Accompanying this, accrediting bodies began demanding professional nurses and health care institutions to become more specific about and responsible for informing patients and families about the status of their health, objectives of therapeutic treatment, and requisite knowledge about safe functioning and self-care (Conway-Rutkowski, 1982). Legal liabilities focusing on acts of commission and omission in education of the patient and family were also stimulants to this interest (Luker and Caress, 1989). As a result, nursing theorists have incorporated the concept into their works, eg: Orem, Neuman, Benner and Watson (Redman, 1993).

The performance of patient education by practicing nurses is somewhat uncertain. Pohl (1965) surveyed 1500 members of the American Nurses Association. Her study revealed confusion among the nurses regarding their teaching role and feelings of lack of preparation to assume this role. Several later studies show that these findings are also relevant in the 1980's and 1990's (Redman, 1991; Wilson-Barnett and Osborne, 1983). Although patient teaching was assigned top priority by 59% of nurses in Palm's

1971 study of 151 hospital nurses in non-emergency situations, Roberts (1975) found that nurses prioritized 'preparation for patients' discharge from hospital' last on a list of ten nursing functions. A higher value by nurses for patient teaching was noted by Lee and Garvey (1978); yet the pressure to give physical care took precedence over patient teaching in a survey by Macleod Clark (1983).

Few studies investigating patient perceptions of the nurse's role in patient teaching, have been reported in the literature. In the hospital setting, Tilley, Gregor and Thiessen (1987) studied 38 nurse-patient dyads to determine if differences in perceptions of the nurses' role as educator existed. Analysis revealed that nurses need to validate their patients' preferences regarding: a) the educational approaches with which patients feel most comfortable; b) the timing of patient teaching, and c) the type of information patients can accommodate during various stages of their illness and recovery. This study also noted that patients most frequently identified a physician as the desired source of medically-oriented information. These results support Benner's (1984) assertion that the nurse's role may be to provide assistance to patients with interpreting their illness experience and integrating the implications of that experience into their lifestyle. Wilson-Barnett (1988) asserts that counseling is often a more appropriate nursing intervention than is patient education.

Luker and Caress (1989), in a review of the patient education literature, question the appropriateness of nurses acting as educators for ill patients. These authors cite complicating factors, such as assessments of readiness to learn, literacy, personal values and chemical imbalances induced by illness as being oversimplified in the nursing literature. Such skills are viewed as being beyond the scope and ability of most nurses. Instead, a Masters' prepared Clinical Nurse Specialist for patient education is advocated by Luker and Caress, to be supported by advances such as computer assisted learning.

Overwhelmingly, the literature describes the role of the nurse in patient education as valid (Dunkelman, 1979; Caunt, 1995; Whitman, Graham, Gleit and Boyd, 1996;

Meredith, Emberton and Wood, 1998; van-den-Borne, 1998). However, unless nursing educators and administrators encourage nurses to teach their patients and hold them accountable for this role, nurses are unlikely to assign patient education the priority it deserves (Woody, Ferguson, Robertson, Mixon, Blocker and McDonald, 1984).

2.3 Content of Post Myocardial Infarction Patient Education

The literature is replete with articles descriptive of post-MI, coronary artery disease, and cardiac surgery educational programs for patients. In-patient and out-patient teaching content is differentiated, with the in-patient focus being on the patients' immediate learning needs. In the days following an MI, information giving is designed to reduce anxiety and promote coping with this stressful situation (Boyd and Citro, 1988; Rudzicki, 1989; Bubela et al, 1990; Thimot, 1992). Follow-up and out-patient educational sessions are designed to assist the patient and significant others with the lifestyle changes which are needed post-MI (Meloche, 1985; Crist, 1987; Bubela et al., 1990).

Content of post MI programs apparent from the literature includes: anatomy and physiology of the heart, pathophysiology of MI, differentiation of angina and MI, when to seek medical assistance, risk factors for coronary artery disease, and necessary lifestyle changes: nutrition, exercise, medications, and stress management (Gibson, 1987; Wood, 1990; Davis, Sullivan, and Tan, 1995; Tsunoda, 1996; Riegel, Thomason and Carlson, 1997). The Heart Attack Book, which is the source of content for post-MI patients in educational programs in Manitoba, contains similar information (Heart and Stroke Foundation, 1996). An earlier edition of this publication (1988) was utilized in the study being described. This study was conducted in early 1997, prior to use of the revised HAB.

2.4 Cardiovascular Patient Education Improves Knowledge

The majority of research studies related to cardiovascular patient education have measured the effectiveness of structured and non-structured education programs on knowledge acquisition.

Deberry, Jefferies and Light (1975) demonstrated improvement in patients' medication knowledge levels following an individualized teaching program. The timing of teaching relative to post-testing was not described. Long term retention of that knowledge was not sustained, as lower knowledge scores were found on clinic follow-up appointments. The authors noted that individual motivation, the presence of family members during teaching, and the number of different teachers involved with one patient influenced knowledge outcomes.

Garding, Kerr and Bay (1988) postulated that a planned program of nursing support would increase patient knowledge in six content areas. Fifty-nine participants were randomly assigned to either a control group or a study group. The study group received follow-up clarification of cardiac education program content, and new information via telephone post-discharge from hospital. The test group showed a significant increase in knowledge regarding the area of the MI and recommended exercise compared to the control group. Recommended rest was the only content area in which all study subjects failed to improve their scores.

Forty-eight cardiac surgery patients were provided with a comprehensive teaching program preoperatively (Linde and Janz, 1979). Content included information on the disease process and surgical intervention, activity progression, medication and dietary regimens. Knowledge and compliance measurements were favorably influenced at discharge and each of two follow-up visits. Reinforcement of content occurred during clinic visits, and was a noted intervening factor.

Mills, Barnes, Rodell and Terry (1985) studied the knowledge gains and reported compliance levels of a convenience sample of 277 cardiac patients receiving a standard

cardiac education program. Half of the group were not pre-tested, in order to avoid influence of the practice effect. Statistically significant increases in knowledge occurred. Post knowledge was also a powerful predictor of compliance with the prescribed treatment plan, as measured by telephone four weeks post discharge.

In a 1992 study by Pommier, one hundred hospitalized coronary artery disease patients attended a 60-minute coronary artery disease (CAD) rehabilitation class. Differences in pre-test and one month post-test knowledge scores were correlated with the following six factors: age, years of formal education, number of pack-years of smoking, level of alcohol consumption, number of MIs experienced, and the number of CAD classes attended. Post-test scores were found to have increased significantly from pre-test scores. Pre-test knowledge was significantly negatively correlated with age, and positively correlated with years of formal education, number of MIs experienced, and number of CAD classes attended. The only significant correlation between knowledge improvement and these factors (in the post-test) was with the patient's marital status. Married patients experienced greater improvement in post-test scores.

Steele and Ruzicki (1987) used a separate sample pre-test/post-test design in measuring knowledge gain from a cardiac education program for coronary artery bypass surgery patients. Seventy six different patients were randomly selected to complete either the pre-test or the post-test, in order to control for practice effect. The overall post-test mean was significantly higher than the pre-test mean. Differences between the two groups were not assessed, such as anxiety levels (which may have been lower post-surgery). Ratings of confidence were also assessed in 38 patients. These patients indicated a high level of confidence in ability to perform suggested activities after discharge. Twenty-nine of these responded six weeks post discharge, indicating a high rate of performance of the suggested activities. The post-discharge supports and contacts of these patients were not assessed. The authors recommend that long term

behavioral change education must be followed-up and reinforced in the outpatient setting.

Rahe, Scalzi and Shine (1975) developed a post-MI patient education booklet following anecdotal concerns reported by nurses regarding post-MI patients' lack of basic knowledge at clinic follow-up. The booklet included the nature of CAD, emergency and coronary care unit (CCU) care, diet and smoking, a physical and sexual activity guide, a discussion of psychological factors, return to home and work, and medication usage. The knowledge of 24 patients was assessed before and after administration of the teaching booklet. Overall, a small, statistically significant improvement in scores occurred in the post-test. The authors suggested there may have been a practice effect, since the pre-test was repeated as the post-test knowledge measurement. Also, the authors noted that most patient education occurred near discharge, when the focus was on educating patients about their immediate needs at home. This was the area of knowledge demonstrating greatest improvement in the study.

Improvement in knowledge level following a structured educational program for percutaneous transluminal cardiac angioplasty (PTCA) patients was noted in a one group pre-test/post-test study by Murphy, Fishman and Shaw (1989). A convenience sample of 97 patients were pre-tested for anxiety and knowledge level. Following a slide-tape presentation, an angioplasty booklet, and a consultation, post-tests were conducted immediately, and at 6 months and 2 years. Post-test knowledge was significantly higher for the group in the initial testing. Knowledge levels were not maintained at 6 months or 2 years, and there was no correlation between anxiety and knowledge level at any of the testing periods. The authors recommend repeated reinforcement of CAD risk factor information in the post-discharge period, to promote long term knowledge retention in these patients.

Taylor et al (1990) demonstrated that post-MI patients who received smoking cessation instruction and follow-up support from nurses had significantly higher abstinence rates than patients who received usual care (verbal instruction from their physician to quit smoking). Biochemically verified smoking cessation rates after one year were 71% in the intervention group and 45% in the usual care group, the number of patients totalling 173 (Taylor, Houston-Miller, Killen and DeBusk, 1990). Internal validity of this study may be questionable, as the description of the study given to the control group is not apparent, and may have influenced their behavior. Also, the reliability and validity of the biochemical measures are not given. The authors do conclude that a nurse-provided education and support program was successful in reducing smoking behavior in post-MI patients.

In another study, patients have also demonstrated satisfaction with their perceived knowledge gains following cardiac education programs. Stanton, Jenkins, Savageau, Harken and Aucoin (1984) interviewed 249 patients six months following cardiac surgery. Patients generally felt they had been adequately prepared with regard to activity resumption and avoidance, return to work, sexual functioning and post-operative concerns. Areas lacking for these patients were discussions of possible emotional reactions and changes in how other people reacted to them. Data was also collected regarding the patients' reported experiences of fears and worries. Interestingly, even those patients who stated they felt well prepared experienced fear and worries during the six month follow-up period.

MI patients' knowledge about their disease and care as well as their evaluation of received care improved statistically when associated with programmed learning by nurses involved in their care (Hentinen, 1986). A 50-hour training program for nursing personnel was implemented at the start of this two year study. Post-MI patients' knowledge at the time of hospital discharge was assessed at three times following the nurses' education program. There were no statistically significant differences between

each of the three patient groups in terms of background variables: age, educational level, social status and number of previous MIs. The patients' level of knowledge improved significantly following the program in four areas: the nature of CAD, reasons for bedrest during early care, diet changes, and sexual activity. Before the program, 69% perceived their knowledge as adequate; after two years the respective figure was 75%. The frequency with which nurses were identified as providers of information increased over this time as well. The authors concluded that the educational program for the nurses was associated with improved knowledge scores in their patients.

Other MI patients and their families have expressed dissatisfaction with the cardiac education received while hospitalized. Liddy and Crowley (1987) interviewed 11 patient-spouse pairs two to three months post-MI. The majority of participants expressed concern over their understanding of physiology of the heart, which activities were permissible, what dietary intake was allowed, smoking cessation techniques, and anticipated psychosocial effects. The one area with adequate preparation, according to these patients and spouses was in relation to medications. Liddy and Crowley recommend that nurse educators encourage families to ask more questions, focus teaching on immediate ("survival") needs, and ensure that content is relevant to the patient.

The revised Haussman and Hegyvary (1977) Outcome Criteria for Acute Myocardial Infarction scale was utilized to determine discharge and 3 to 4 months post-discharge knowledge for 150 patients in a study by Edwardson (1988). This tool has established high content validity, and includes the subscales of: General health status; Rest and sleep; Activities of Daily Living (ADL) performance; General health knowledge; Medication knowledge, Activity knowledge; Nutrition knowledge, and Anxiety. At discharge, patients were more informed about general health knowledge than about prescribed medications, activity and nutrition. Medication knowledge was the weakest of these subscales. Patients achieved only 50% of possible scores related to the names,

dosages, times and actions of their medications. Knowledge of side effects, self-care for side effects and drug interactions earned only 25% of the possible scores. The authors express concern over the relatively poor knowledge outcomes, and question the validity of the measurement tool. An additional limitation, as with many of the described studies, is the lack of a control group for comparison.

The underlying assumption present in educational programs for cardiac patients is that those who are well informed about their illness are more prepared to participate in their health care. The major outcome variable utilized to determine program effectiveness in the bulk of the aforementioned studies has been knowledge retention by the patient. Overall, the studies suggest that patient knowledge does increase (Linde & Janz, 1979; Stanton et al., 1984; Garding et al., 1988), but results are not consistent (Deberry et al., 1975; Rahe et al., 1975; Liddy & Crowley, 1987; Edwardson, 1988). A concern in this regard is that it is often not clear what impact this has had on the patient's behavior. The commonly-held belief that knowledge influences behavior is not supported by many of these studies (Linde and Janz, 1979; Mills et al., 1985). Additionally, do measurements of patient knowledge truly reflect learning that results from patient education? What other variables are present which influence the learning of these adult learners (eg: prior experience, mass media information, educational level)? Zerwic (1998) studied a random community sample to determine the lay public's knowledge of MI symptomatology. He found that both accurate and inaccurate perceptions exist. Prior experience with MI, either personally or in someone close to the subject, was the best predictor of knowledge level.

A further concern regarding the results of these studies is that subjects' knowledge gains were not weighted for priority. Each piece of information is given equal importance, which is not necessarily the case in these patients' lives. This norm-referenced methodology only serves to describe how patients fared in comparison

to each other (Mirka, 1994). Whether patients have learned information that is of use to them in dealing with their lifestyle changes is not known.

Studies of cardiac patient education have also been designed to compare the effectiveness of various programs and teaching methodologies. Barbarowicz, Nelson, DeBusk and Haskell (1980) randomly assigned 230 patients to CABG education programs. The control group received usual teaching as practiced in that facility. The experimental group received a slide-sound program and a booklet. Common to both groups was content on disease process, medications and risk factor management. Knowledge tests were administered before teaching, at discharge, and at one and three months post-discharge. Knowledge increased in both groups, but only significantly in the experimental group. These findings were unchanged at the 3 month follow-up in both groups. The experimental group reported higher levels of satisfaction with teaching received, and a lower need for additional information. Behavior changes after discharge were measured, and found to be similar between both groups. The advantages of the slide-sound presentation were noted to be that patients received standardized information at a pace which they could control. The nursing staff were also freed up from imparting basic information, leaving more time for individualized instruction.

An older study, by Bille (1977) compared usual cardiac teaching (considered 'unstructured') with an experimental 'structured' program developed by the investigator. A knowledge questionnaire was administered pre-discharge and one month later. Bille noted that results were not significantly higher in the experimental group, possibly because the unstructured program met the learning needs of patients at the times they expressed their needs.

In a similar study, Fletcher (1987) developed structured educational sessions for cardiac patients, and compared them to a 'usual' education control group. Outcomes were measured by patient reports of behaviors and case records at 2 and 6 months post

discharge. The experimental group reported having incorporated appropriate diet, exercise and smoking behaviors at a more significant rate than the control group. These findings are supported in another study by Raleigh and Odothan (1987). The experimental group gained significantly more knowledge at discharge than the control group, while pre-test results were similar for both. Two months later, the experimental group had resumed 69.6% of their premorbid activities, the control group 47.8%, a significant difference.

Cardiac education programs with counseling components demonstrated significantly reduced anxiety and depression in MI patients, versus controls of education alone. Thompson (1989) randomized 60 post-MI hospitalized patients and their partners into treatment and control groups. Outcomes were measured by the Hospital Anxiety and Depression scale (developed by Zigmond and Snaith, 1983). In comparison with the control group, mean anxiety and depression scores were significantly decreased from baseline scores in the experimental group. In addition, anxiety was also significantly reduced in their partners. The author therefore recommended supportive nursing interventions which include the patient's spouse/partner. Knowledge was also assessed in this study. Findings indicated that those in the experimental intervention group demonstrated increased knowledge levels compared with the education only group (Thompson, 1991).

Carlsson, Lindberg, Westin and Israelsson (1997) produced similar findings. One hundred and fifty post-MI patients were randomized into 'usual care' and 'intervention' groups. The intervention group participated in a physical training programme, combined with counselling visits with a nurse and assessments by a cardiologist in the year following hospital discharge. The control group attended to their general practitioner during this time period. A questionnaire was utilized to report dietary, activity and smoking practices at the one year follow-up appointment. The intervention group reported significantly improved dietary habits and 50% smoking cessation.

Differences in physical activity were not significant. The authors conclude that continued support and reinforcement of learning may significantly reduce the recurrence of MI, by curtailing the influence of risk factors.

In contrast, Scalzi, Burke and Greenland (1980) found negligible improvement in knowledge of MI and its treatment in their experimental educational program group at hospital discharge. The experimental group received specific educational content delivered by individual instruction, and printed and audiovisual materials during hospitalization; information was reinforced at clinic visits post-discharge. The control group received no organized educational program. The authors propose that retention of information may be limited during the acute phase of illness. This two year study of 32 post-MI patients also found minimal behavior change in the experimental group over the follow-up period. Scalzi et al. noted continued questions from patients and families at clinic visits, and therefore support ongoing instruction for post-MI patients six weeks after hospital discharge.

Supporting this study, Barnason and Zimmerman (1995) found no significant differences in patient knowledge when comparing three teaching methods. Ninety subjects were randomly assigned to receive inpatient teaching alone, inpatient teaching with postdischarge telephone follow-up, or inpatient teaching with outpatient follow-up group support. Cognitive knowledge was assessed using the Heart Disease Management Questionnaire, with demonstrated reliability and validity. Pearson correlations showed significant negative relationships between age and knowledge, which prompted recommendations to use other teaching strategies designed for older learners.

Also supporting the results of Scalzi et al., Sivarajan et al. found no significant differences in recommended behaviors in their study randomizing 258 post-MI patients into three varied educational groups (Sivarajan, Newton, Almes, Kempf, Mansfield and Bruce, 1983). The control group (group A) received conventional medical and nursing

management; group B1 received conventional management plus an outpatient exercise program; group B2 was as group B1, plus 8 one-hour support group sessions. At six month measurement of behaviors, no significant differences were noted among the groups. Behaviors that were measured included smoking cessation, diet modification, and weight loss. The authors speculate that the support groups of experimental group B2 were impersonal in nature, and that the patients involved did not receive adequate individual counseling regarding their risk factors. Additionally, the authors indicate that expecting post-MI patients to change several behaviors at once may be unrealistic and overwhelming to the patients.

A few trends from these studies can be identified. Formal, structured inpatient cardiac education is able to increase patients' knowledge. However, as Oberst (1989) notes, "Neither knowledge nor attitude change, measured by tests and self-reports, is sufficient evidence of the efficacy of self-care education. Examination of program efficacy must go beyond cognitive outcomes to the examination of behavioral outcomes or compliance" (p.622). The studies examining behavior change following knowledge acquisition are inconclusive at present.

The studies also indicate that audiovisual methods, support and counselling and follow-up sessions all enhance the learning of cardiac patients. Reading materials which comprise a large component of 'usual' teaching strategies may be limiting the successful knowledge gain of some patients, since they may be written at a level exceeding the comprehensive skills of those using them (Duryee, 1992). Tripp-Reimer and Afifi (1989) suggest written materials may not include culturally relevant issues, which may only be addressed in one-on-one teaching situations. Perhaps these are reasons why alternative teaching methods are demonstrated to be more effective.

2.5 Nurses' and Patients' Perceived Learning Needs

Consideration by health professionals of what information the patient wishes to know is a relatively recent phenomenon. Historically, what the patient was told about his condition was determined, usually by his physician, and supported through the actions of others involved in his care, including nurses (Dunkelman, 1979). One early study of patients' perceived learning needs was conducted by Linehan in 1966. The investigator interviewed a convenience sample of 450 medical-surgical patients in a large US hospital. Questions were designed to elicit the information patients received, from whom, and what information they felt was lacking. A total of 2,459 unanswered questions were identified by this group of patients. The author concluded that patients received inadequate information regarding their medical concerns, treatment and self care. Linehan recommended that improved patient education within hospitals include the following: 1) that physicians should develop standardized discharge instructions, and 2) that new methodologies, such as printed materials for teaching, be developed.

Dodge (1969) elaborated on Linehan's work, conducting 116 patient interviews. Patients were asked to describe the kinds of information which they themselves felt they should be given, and its relative importance. One hundred and one different responses were received, 32 of which were repeated by at least 10% of respondents. Patients' main cognitive needs concerned information which would enable them to meet the lifestyle adjustments which were being imposed upon them. This was an area identified as lacking repeatedly by patients. Dodge recommended that patients be given more information about their immediate self-care needs, suggesting the patient is more likely to listen if he feels the information is important for him to learn.

At the same time, those in a position to give the information are more likely to do so if they think it is important to give it (Dodge, 1972). Dodge later administered questionnaires to 139 patients and 62 nurses, asking them each to rate the importance of the information requested by patients in the 1969 study. Nurses stressed the importance

of preparing patients for coming events, both during and after hospitalization. Patients did not identify this as important, and were more interested in details about their current condition. Dodge interpreted the nurses' responses as general information giving, based on what they were 'permitted' to teach, and what was safe for all patients to be told. In contrast, the patients may have been seeking information that was individualized to their own situation. Dodge noted that this is a limitation of the study. However, interestingly, the author does state, "certain information is better withheld even if the patient wants it" (p.1854).

Goddard and Powers (1982) compared nurses' and hemodialysis patients' ratings of the relative importance of patients' educational needs obtained from the literature. The findings supported those of Dodge (1972). The authors recommended that listening to patients in order to assess uncertainties about treatment should be the first step in addressing their educational needs. This study was replicated with a population of cancer patients by Lauer, Murphy and Powers (1982). Once again, the nurses and patients did not perceive the same priorities for patient learning. Nurses emphasized the value of addressing psychological concerns of patients, but patients were more interested in minimizing the effects of therapy. The authors expressed concern about the extent to which these patients attend to or comprehend the teaching done by these nurses, due to the apparent gaps in their knowledge.

The first study conducted on the differences between nurses' and cardiac patients' perceptions of patient learning was completed in 1982 by Adom and Wright. The effectiveness of a cardiac education program was evaluated by 60 patients and 13 nurses, using a Likert-type scale. Nurses perceived that patients had acquired higher levels of knowledge than the patients did, and incorrectly identified which teaching methodologies the patients preferred. The authors recommended that nurses should conduct individualized assessments of patients' needs and preferences before teaching specific content.

In another study, 31 post MI patients and 36 CCU and post-CCU nurses rated the relative importance of items on the Cardiac Patient Learning Needs Inventory - CPLNI (Gerard and Peterson, 1984). Forty-three items in the following categories were rated by these groups: Introduction to CCU; Anatomy and physiology; Psychological; Risk factors; Medications; Diet; Activity; and Miscellaneous. In congruence with the literature, both patients and nurses agreed that all of the information topics were important. Patients ranked risk factors as most important, while nurses ranked medications in this manner. Risk factors were near the bottom of the priority list for nurses. Both patients and nurses ranked diet as least important. The results of the study suggest a consistency between patient and nurse perceptions on most informational topics, but that the sequence of topics discussed should be based on individualized assessments of the patients' perceived needs (Gerard and Peterson, 1984).

A partial replication of Gerard and Peterson's study was conducted by Karlick and Yarcheski (1987) surveying 30 nurses and 30 post-MI patients. The CPLNI was utilized. In general, the results in this study mirrored those of the original study: patients ranked risk factors as most important for them to learn, while nurses ranked medications as most important for patients to learn.

Wingate (1990) varied the methodology slightly in surveying 32 post-MI patients, using the CPLNI at three different time periods: in CCU, one to two days pre-discharge, and two to four weeks post-discharge. Patients' learning needs were demonstrated to vary with patient location. In CCU, patients prioritized anatomy and physiology knowledge; on the ward and at home medications were significantly higher than for CCU; risk factors were in the top two categories at each study time. These findings are similar to those of each of the previous two studies. Patients also rated all categories of information as important to know, at each time period. The authors note, that although this is consistent with other literature, it does compound the difficulty of priority setting.

Concurrently, Chan (1990) utilized the CPLNI with 30 post-MI patients on the wards and then two weeks post discharge. Patients were asked to rate the relative importance of the content they were required to learn, and a rating of how realistic it was for them to learn. In hospital, six of the seven categories were 'important' to learn, but only 'moderately realistic' to learn. After discharge, the realistic to learn rating was significantly higher. Similar to previous findings, 'anatomy and physiology', 'medications' and 'risk factors' were the three most important to learn content at both time periods.

Hagenhoff, Feutz, and Conn (1994) adapted the CPLNI for use with a population of congestive heart failure (CHF) patients - the CHFCPLNI. Thirty patients with CHF and 26 nurses who cared for CHF patients were studied. Patients ranked medications, anatomy and physiology and risk factors high in importance, similar to previous studies. Nurses ranked medications, risk factors and diet as most important. This study was partially replicated in 1998 with 50 patients and 47 nurses completing the CHFCPLNI (Frattini, Lindsay, Kerr and Ja Park, 1998). Results were identical to the previous study, and in keeping with historical studies, both groups identified most of the information as "important to learn". The authors concluded that patients generally value information they receive from health professionals, and that "...when patients are presented with information that may help them improve how they feel, or improve their symptoms, they might become motivated to learn" (p. 14).

A similar study, by Casey, O'Connell and Price (1984), ranked relative importance of information items by 12 cardiologists, 33 CCU nurses, and 30 patients 4 to 7 days post-MI. The three groups were congruent on rating the most important topics for a cardiac education program: the signs and symptoms of a heart attack, how to modify or change personal risk factors, the names, dosages, and side effects of medications, and identifying personal risk factors. The authors recommend that even with this kind of congruence, individual assessment of learning needs is still vital.

Moynihan (1984) studied 17 patients' post-MI learning needs at three time periods: while in CCU, on transfer to a medical floor, and following discharge. Patients rated all educational topics of the program to be of importance to them. However, the relative importance of topics varied over the three time periods. In contrast to Gerard and Peterson (1984) and Casey et al (1984), risk factor knowledge was not a priority for these patients at any time period.

In a study by Hanish (1993), patients were asked to give a time preference in which to receive a selection of cardiac education information items, and to rate these items in terms of importance of their educational value. Not unexpectedly, all items were rated as important to learn. The four most important items differed from previous studies, and included activity instructions, common expectations post-MI, medications, and signs indicating complications.

Risk factors were identified by the investigator as a knowledge gap for 25 post-MI patients interviewed at discharge by Murray (1989). These patients expressed satisfaction with their perceived preparedness for discharge, yet demonstrated only a vague understanding of rehabilitation information that had been shared with them. Nursing staff involved in their care expressed concern regarding this apparent ignorance.

Nicklin (1986) noted similar knowledge gaps in patients post-discharge, following an established inpatient education program. A telephone call-back system was initiated to answer cardiac patients' and families' questions in the post-discharge period. Over a 5 month trial period, 217 calls were received. Forty percent of the concerns arose within the patient's first week at home. Forty-three percent of calls were of a serious nature, resulting in the patient being directed to an emergency department or to contact his/her physician. Medication concerns were central in 19% of calls. The author noted that the educational program in place was originally designed to address these topics, yet patients continue to have questions post-discharge. She recommended increased

support and follow-up for patients in the early discharge period to reinforce teaching received in hospital.

In a recent descriptive study of the informational needs of post-MI patients during early convalescence (de Leon-Demaré, Savage and Kilpatrick (in press) the Q-sort methodology was utilized to elicit the relative value of information statements contained in the Heart Attack Booklet (Heart and Stroke Foundation of Manitoba, 1988), the teaching tool used to educate post-MI patients in Manitoba. The patients were asked to identify which information was most helpful and least helpful in the booklet. In contrast with Gerard and Peterson (1984), patients in the study rated the following as most helpful: actions to take if symptoms occur, signals of MI, when to call a physician, differences between MI and angina, and what an MI is. The least helpful information identified was: where to go to quit smoking, how to quit smoking, how smoking is detrimental, when to return to work, and how smoking increases the risk of another MI. Differences in the findings may be partially due to the methodology: the Q-Sort produces a normal distribution of responses; not all information can be equally as helpful or unhelpful. The number of information bits in each category is dictated by the procedure. In addition, de Leon-Demaré et al utilized the terminology 'most helpful'. Gerard and Peterson (1984) had participants rate information on a 5 point scale of 'not important' to 'very important' knowledge to have. The apparent differences in these questions may have well produced varied responses.

In order to achieve effective patient education, educators need to consider patients' perceived learning needs (Wang, 1994). The studies which have been discussed demonstrate that nurses' perceptions of patients' educational needs can differ from those of the patient's own (Dodge, 1972; Goddard and Powers, 1982; Lauer et al, 1982; Gerard and Peterson, 1984; Karlick and Yarcheski, 1987; Casey et al, 1984). If health care providers are interested in facilitating changes in behavior, they must be prepared to address what the patient feels is important (Mirka, 1994). Patients will therefore be

better able to effectively care for themselves and function at an optimum level of health; the contribution of this toward lowering health care costs by reducing length of stays and hospital readmissions is also strong incentive (Wang, 1994). Although debate continues, the patient's knowledge of his or her disease and treatment is associated with increased compliance in most nurses' beliefs (Bille, 1977).

2.6 Principles of Adult Learning

The nursing literature recognizes Knowles' (1980) principles of adult learning as valuable tools aiding nurses to assess their patients' perceived learning needs (Grady, Buckley, Cisar, Fink and Ryan, 1988). Knowles has written extensively on the topic of Adult Education (1980, 1984a, 1984b, 1987).

Knowles' principles regarding the adult learner (post-MI patients would be classified as adult learners) are generally accepted by various disciplines:

- 1) The adult learners' self concept moves away from being a dependent personality toward being a self-directed human being;
- 2) Adults accumulate knowledge that becomes a rich resource for learning;
- 3) Adults' readiness to learn is oriented to tasks of their social roles; and
- 4) Adults seek knowledge that is immediately applicable; they are performance-centred (1980, p.44-45).

Nurses who consider these principles in preparing educational programs for post-MI patients may strengthen the effectiveness of their programs. Dunbar (1998) describes revisions made to a post-MI teaching program, based on the Principles of Adult Learning. In contrast to typical, structured teaching plans, this system focuses on the patients' desired learning needs prior to discharge. Patients are interviewed in an open-ended style and encouraged to share their MI experience. Nurses are then able to impart information where the patient identifies a gap in understanding. Although the author does not describe assessment of the effectiveness of this program, several

positive outcomes are noted. Patients respond positively to this approach, and nurses have gained valuable knowledge about the MI experience from these patients, possibly increasing their therapeutic effectiveness in the future.

2.7 Summary

In summary, a review of the literature revealed the following:

- 1) The role of the nurse includes a responsibility for patient education in order to foster independence for the patient and therefore, reduce demands on the health care system.
- 2) Controversy exists as to the effectiveness of cardiovascular education programs in increasing patients' knowledge and promoting behavior changes.
- 3) Post-MI patients consider all aspects of cardiac education to be important to learn, but acknowledge it is not realistic to learn all aspects during the hospitalization period.
- 4) Patients and nurses differ on what information is of priority for the post-MI patient to learn when time and other resources are limited.

The findings of this literature review support the need in Manitoba to examine hospital-based nurses' perceptions of what aspects of cardiac teaching post-MI patients value as the most helpful information in the early convalescent period. Since hospital stays are becoming shorter for all patients, including post-MI patients, opportunities to engage in teaching activities is limited and nurses' perception of what information patients value will undoubtedly influence the content they choose to focus on. It is therefore important to determine congruence between nurses' and patients' perceptions of informational needs in order to ensure cardiac teaching is effective.

CHAPTER THREE: METHODOLOGY

3.0 Purpose of the Study

The literature review has demonstrated a lack of cohesion between nurses' and post-MI patients' perceptions of the patients' learning needs. A recently completed Manitoba study investigated the patients' perceptions of which content from the Heart Attack Book (HAB) were most helpful to them in early convalescence (deLeon-Demaré et al., in press). The present study considered the same question, from the nurses' viewpoint. In order to compare congruence of the perceived learning needs between patients and nurses in the two studies, the same methodology (the Q-sort) was utilized.

3.1 Design

The Q methodology encompasses a distinctive set of psychometric and operational principles that provides researchers a systematic and rigorously quantitative means for examining human subjectivity (McKeown and Thomas, 1988). It is a method of objectifying subjective material so that it is measureable in an orderly and scientific manner, without loss of meaning (Waltz, Strickland and Lenz, 1991). Degrees of similarity between groups are measured on subjective data such as perceptions and values.

Q methodology is a hybrid of both quantitative and qualitative research methodologies. In quantitative designs, measurement of the differences between individuals is of concern. This "...norm-referenced approach of measurement...assumes that one person differs from the next only in quantitative degree, an outcome antithetical to nursing practice, which values the uniqueness of the individual" (Dennis, 1986, p.8). Similar to qualitative designs, Q methodology permits the study of individual human viewpoints and experiences (Munhall, 1989). However, subjects are

given specific items to respond to. Statistical analysis derives categories from the Q-sort, and the categories have significant differences among them (Dennis, 1986).

In the current study, the Q methodology provides a means of identifying content from the Heart Attack Book (HAB) which nurses who participate in cardiac education programs believe will be most helpful to post-MI patients in the early convalescent time period. A set of cards ("the Q-sort instrument") has been developed by deLeon-Demaré et al. (in press), based on a series of statements from the HAB. This Q-set consists of 60 4x6" index cards developed for use in the study, "Informational Needs of Post-MI Patients During Early Convalescence" (in press). The methodology requires that the subjects sort the cards into a specified pattern, indicating their perceptions of which card(s) contain the most helpful information, the least helpful information, and those which the subject considers the contents to be neutral. To create a normal distribution, subjects are instructed to sort the cards into a pre-determined set of piles (Waltz et al, 1991).

The Q-sort technique has demonstrated numerous advantages in its application since being developed by Stevenson in 1935. It has been utilized extensively in nursing research studies (eg: Green and Stone, 1972; Cornell, 1974; Volicer and Burns, 1977; Skorupka and Bohnet, 1982; Leary, Gallagher, Carson, Fagin, Bartlett and Brown, 1995; Bilodeau and Degner, 1996). A major advantage is the relatively small number of subjects which are required. The unit of analysis, or "n" for the Q study is the number of items, referred to as the Q-set, rather than the number of persons, the P-set (Waltz et al., 1991). Q-sets usually contain approximately 60 items. The HAB Q-sort conforms with this criteria.

Additional advantages to this technique are identified by Waltz et al., (1991): "...because subjects' responses are structured, less social desirability comes into play and the problems of missing data, midpoint, undecided and neutral responses are virtually nonexistent" (p. 364). The method is also less time consuming for

investigators, and less costly (Engelhardt, 1971). Participants have noted the Q-sort to be non-threatening, and a means to have them actively participating (Simpson, 1989). To date, more than 1,500 bibliographic entries exist in the literature regarding Q methodology use in the social sciences (McKeown and Thomas, 1988).

Disadvantages have also been noted for the Q-sort methodology. Validity may be compromised if Q-set items are not correctly selected; reliability is a concern if subjects fail to understand and comply with the requested sorting pattern, and subjects may consider the time required to complete a Q-sort as excessive (Waltz et al. 1991).

3.2 Data Collection

3.2.1 Instrument

The Q-set being utilized in this study has been developed and tested in a recent study (de Leon-Demare et al). Teaching items from the HAB were condensed into brief statements which captured their intent. These statements were type-written onto 4X6" index cards. Content validity was established by the investigators through review of card content by expert clinicians. Pilot testing was carried out in the de Leon-Demaré study, providing strength to the reliability of the Q-sort procedure. The current investigator pilot tested the study with three subjects. Rankings of HAB items were not significantly different between the study group and the pilot test group ($p = 0.19$). Finally, a rigorous explanation of sorting procedures were developed in the de Leon-Demaré study to strengthen reliability of results between subjects. Such procedures were replicated in this study, lending easier comparison of results, and building on reliability and validity results for the tool.

3.2.2 Population and Setting

The P-set for the proposed study included Registered Nurses involved in the education of post-MI patients. A convenience sample of 20 nurses from a community hospital setting were selected using the following criteria: (a) active practicing Registered Nurse; (b) minimum of one year's experience in educating post-MI patients in a program utilizing the HAB; (c) ability to read and speak English and (d) willingness to participate.

3.2.3 Entry into the Setting

Permission to invite Registered Nurses who are employed in the Intensive Care Unit (ICU) and on the medical ward (3 North) of the Grace General Hospital (GGH) to participate was obtained through the Nursing Research Committee of the Hospital. A letter was sent to the Chairperson of this committee requesting such permission (Appendix D). Permission to proceed was granted in February 1997.

3.2.4 Protection of Human Subjects

Approval from the Ethical Review Committee of the Faculty of Nursing, University of Manitoba was garnered before any contact with the GGH Nursing Research Committee. Contact of participants was delayed until after both approvals were attained.

Registered Nurses employed in the GGH ICU and on the medical ward were initially contacted through the Nurse Managers who distributed the Invitation to Participate form. This form explained the study and invited nurses to participate (Appendix A). In addition, the Nurse Managers were requested to read and post a letter containing the same information during a regularly scheduled staff meeting. No staff meetings were scheduled for this time period. As a result, the researcher was granted permission to attend the settings on several occasions. The Nurse Managers advised staff of the

opportunity to participate, and announced the time and location where they could be involved. RN's approached the researcher at their convenience. Workloads were managed by regularly - scheduled relief staff in their absence. Confirmation of informed consent was obtained at the time of the Q-sort procedure (Appendix C). The Permission to Contact form (Appendix B) was not utilized.

Participation in this study was voluntary, and respondents were advised that they could withdraw from the study at any time. Respondents' names were not used, Q-sort packages were identified only by number. Raw data that was collected has been kept in a locked filing cabinet and will continue to be for a period of seven years; it will be available only to the researcher and her thesis advisory committee. Data will be destroyed following the seven year period. A copy of the study results will be made available to the Ethical Review Committee of the University of Manitoba, the GGH Nursing Research Committee, and to any respondent who requests results.

3.3 Data Analysis

Recommendations from the literature and the desire to replicate the recently completed work of deLeon-Demare et al. determined the data analysis procedures to be employed. The sorting of the Q-set into pre-determined piles allowed the scoring of individual items, based on the pile into which they were placed. Mean scores for each item were determined, and compared between the two groups as rank scores. Items were also categorized to facilitate comparison of results of historical studies (see Appendix G). Categories were previously identified by deLeon - Demaré et al. The categories are comparable with those found in the MI teaching literature.

The Mann-Whitney U coefficient test determined the agreement of ratings of each item (Rosenthal, 1992). The SPSS Version 8.0 for PC facilitated the statistical analysis procedure. Statistical significance was considered at the $p = .01$ and $p = .05$ levels.

Statistical consultation was provided by statisticians associated with the Manitoba Nursing Research Institute.

Following statistical consultation, K. deLeon - Demaré (head researcher) was approached and asked to share raw data from her 1996 study. Thorough cooperation and support provided a random sample of 20 subjects' responses. The equal sample sizes were used to increase the validity of statistical comparison of the two studies' results.

3.4 Summary

A descriptive Q methodology design was utilized to determine which items from the HAB nurses perceive will be the most helpful to post-MI patients in the early convalescent period. The results of analysis of the Q-sort were compared with results recently obtained from patients, using the same methodology (deLeon-Demaré et al., in press). Categorization of HAB items facilitated a comparison of these results with findings of earlier, comparable studies.

CHAPTER FOUR: RESULTS

4.0 Introduction

The purpose of this study was to determine which information shared with myocardial infarction patients is deemed to be most helpful for those patients by the nurses who provide the teaching. The perceptions of nurses in an intensive care unit were compared with those of nurses on a medical ward. Ten nurses were studied from each setting. The nurses' perceptions were also compared with those of myocardial infarction patients. The results from three studies in the 1980's were used for a historical perspective. A recent study by deLeon-Demaré et al surveying post-MI patients was available for current comparisons. Both the deLeon-Demaré et al and the current studies consisted of a card sorting procedure, in which participants sorted items from the Heart Attack Book into piles rated from "most helpful" to "least helpful". An "undecided" pile was included. Pile sizes were pre-determined by the Q-sort procedure, and were identical in the two studies. Information items were then given a score, based on their pile placement. A rank was determined using the mean scores for each item. Items were also grouped into categories. The ranking of categories were utilized as a comparison between the current and historical studies and between patients' and nurses' responses. Demographic information was collected from the participants in the form of a short questionnaire. Data analysis was performed utilizing SPSS Version 8.0 for PC.

The data from the questionnaire and the Q-sort procedure are presented in the following format:

4.1 Sample characteristics.

4.1.1 Demographic description.

4.1.2 Nursing and MI Teaching experience.

4.2 Heart Attack Book Category Rankings.

4.3 Heart Attack Book instructional items

4.3.1 Items ranked "Most Helpful".

4.3.2 Items ranked "Least Helpful".

4.3.3 Items ranked "Undecided".

4.4 Comments Made by Nurses during Data Collection.

4.5 Similarities and Differences in Item Rankings Between Nursing Groups.

4.5.1 Items ranked "Most Helpful".

4.5.2 Items ranked "Least Helpful".

4.5.3 Items ranked "Undecided".

4.6 Similarities and Differences in Item Rankings Between Nurses and Patients.

4.6.1 Items Ranked "Most Helpful".

4.6.2 Items Ranked "Least Helpful".

4.6.3 Items Ranked "Undecided".

4.1 Sample Characteristics

4.1.1 Demographic Description

Data were obtained from two groups of nurses employed in differing areas of a community hospital (Intensive Care Unit - ICU and medical ward - 3N). Data collection occurred in April and May of 1997. The mean age of the nurses from ICU was 42; the mean age for the medical ward group (3N) was notably, although not significantly, lower, 35 years ($p = 0.057$). The majority of each group were married and were employed full-time. The RN Diploma level of education was the most common for both ICU and 3N nurses. A certificate course was also held by 30% of ICU nurses. The 3N group had no members with certificate courses completed. This educational level difference was not statistically significant ($p = 0.10$).

4.1.2 Nursing and MI Teaching Experience

The mean number of years which ICU nurses who participated in this study have been RNs was 19.8. The mean for the 3N nurses was less, 11.7 years ($p = 0.061$).

The mean number of years which the ICU nurses have been involved in MI teaching was significantly longer (13.4); than for the 3N nurses: 8.9 ($p = 0.02$).

Table 1 describes the socio-demographic characteristics of both groups of nurses in more detail:

Table 1: Demographic Characteristics of the ICU and 3N Groups

CHARACTERISTIC	ICU GROUP (n=10)	3N GROUP (n=10)
AGE		
Range	31-56 years	27-44 years
Mean	41.7 years	34.8 years
MARITAL STATUS		
Married	7	7
Single	2	3
Divorced	1	0
EMPLOYMENT STATUS		
Full-time	8	7
Part-time	2	3
EDUCATION LEVEL		
RN Diploma	6	9
RN Diploma with Certificate Course	0	0
BN Degree	1	1
BN Degree with Certificate Course	3	0
RN EXPERIENCE		
Mean Number of Years	19.8	11.7
Range	10 - 33 years	7 - 25 years
MI TEACHING EXPERIENCE		
Mean Number of Years	13.4	8.9
Range	7 - 20 years	3 - 17 years

4.2 Heart Attack Book Category Rankings

Instructional items were ranked individually and in categories to facilitate comparison among nursing groups and patients. The categories were previously determined in the deLeon - Demar  study. Categories flowed naturally from item content, and are similar in the present and previously completed studies. Where category titles differed in the literature, the researcher utilized her own judgement to determine if the content was equivalent. Category titles are as follows:

Anatomy and Physiology
 Risk Factors
 Psychosocial Aspects
 Medications
 Diet
 Activity
 Actions for Survival

HAB instructional items included within each category are listed in Appendix H.

Table 2 provides a comparison of the ranked means for each category, between ICU and 3N nurses in this study.

Table 2: HAB Category Ranked Means: ICU vs 3N

CATEGORY	MEAN SCORE (RANK)		
	ICU	3N	ALL NURSES
Actions for Survival	2.29 (1)	1.81 (1)	2.05 (1)
Medications	3.75 (4)	3.54 (2)	3.65 (2)
Risk Factors	3.42 (2)	4.15 (3)	3.76 (3)
Anatomy & Physiology	3.70 (3)	4.40 (4)	4.05 (4)
Psychosocial Aspects	4.21 (5)	4.57 (7)	4.39 (5)
Diet	4.70 (6)	4.46 (5)	4.58 (6)
Activity	4.71 (7)	4.49 (6)	4.60 (7)

4.3 Heart Attack Book Instructional Items

Instructional items were scored based on pile placements by the nurses. A low score was the result of the item being ranked in predominantly the “helpful” piles. A high score was the result of the item being ranked in predominantly the “unhelpful” piles. A mid-point score was obtained by the item receiving primarily “undecided” ranking, or a cluster of rankings around this point. Utilizing SPSS for PC Version 8.0, the mean score of each item was determined for the nurses overall, and then for the two groups of nurses. Individual mean scores are not reported in this study, due to the volume of HAB items. Of practical interest are those items which nurses believed were the “Most Helpful”, the “Least Helpful” and those upon which they were “Undecided”. Results within two standard deviations were reported in each category. Comparison to the findings of deLeon-Demaré et al is facilitated by this categorization.

4.3.1 Items ranked “Most Helpful”.

The items chosen by nurses to be most helpful for MI patients to learn were items categorized as “Actions for Survival”. Table 3 describes these items:

**Table 3: Heart Attack Book Items Ranked “Most Helpful”
by Nurses (n=20) \bar{X} Score < 2.95**

\bar{X} SCORE	CARD NUMBER	ITEM
1.20	54.	What actions I should take if signals of a heart attack occur.
1.55	53.	What the signals of a heart attack are.
1.70	56.	When I should take “nitro”.
1.80	57.	How I should take “nitro”.
1.90	55.	When an ambulance should be called.
2.20	5.	What the differences between a heart attack and angina are.
2.25	28.	How to take my medications.
2.55	24.	Why each medication is taken.
2.75	2.	What a heart attack is.
2.95	52.	What symptoms I should call my doctor for.

4.3.2 Items ranked “Least Helpful”

The items chosen as “Least Helpful” by all nurses were those related to information needed by patients for self care and risk factor modification. The items are described in Table 4.

**Table 4: Heart Attack Book Items Ranked “Least Helpful”
by Nurses (n=20) \bar{X} score > 5.10**

\bar{X} SCORE	CARD NUMBER	ITEM
5.90	6.	What other tests my doctor may order in the weeks to come
5.65	40.	Tips to manage my activities when the weather is hot or cold.
5.55	44.	My personal maximum pulse rate when exercising.
5.55	41.	The necessity for warm ups and cool downs when exercising.
5.55	32.	Tips to reach my goal weight.
5.50	9.	Where I can go to learn to stop smoking.
5.30	58.	That “nitro” are not habit forming.
5.15	45.	Tips to manage a regular walking program.
5.15	16.	That alcohol can increase my blood pressure.

4.3.3 Items Ranked as “Undecided”.

The item most frequently placed into the “undecided” pile (mode - 4) was:

17. How I can tell if my blood pressure is high.

Items with mean scores of 3.9 - 4.1 were also regarded as “Undecided” (p. 40):

**Table 5: Heart Attack Book Items Ranked “Undecided”
by Nurses (n=20) \bar{X} score 3.9 - 4.1**

\bar{X} SCORE	CARD NUMBER	ITEM
4.05	14.	That high blood pressure increases the risk of a heart attack
4.05	31.	That being overweight increases the risk of a heart attack.
4.10	4.	How the heart heals after a heart attack.
4.10	59.	How to store my “nitro”.

4.4 Comments Made by Nurses During Data Collection

A recurrent theme in the comments made by nurses from both groups was that they felt all the HAB items under consideration were important for patients to learn. Frustration was expressed with the methodology, which required that a certain number of items be ranked as “unhelpful” and “least helpful”. The researcher would state the premise that nurses are having to prioritize their teaching due to time constraints, and that the study sought to identify those priorities. The nurses unanimously agreed that this was occurring. The reminder of this issue did expediate the card sort process for many of the nurses. Frustration was also expressed that the researcher was not specifying the type of MI patient (ie: first-time MI, or patient with recurrent MI). Nurses stated that they personalized their education plan, based on the patient’s prior knowledge level. Certain HAB items would be briefly reviewed or omitted altogether if the patient had received former MI teaching. In response to this problem, the researcher asked nurses to consider all MI patients in general.

Several nurses also commented that if they knew little or nothing about the HAB item on the card they were sorting, it often was delegated to one of the “least helpful” piles. In two instances, the nurses felt that certain content was better taught by a

discipline other than nursing, and therefore was a low priority from their perspective. Another nurse alluded that if she was unaware of the information contained in the card, it probably was not of value for patients to learn.

The two nursing groups noted that all information included in the card sort was probably not realistic for MI patients to learn during their hospitalization. ICU nurses in particular recognized the limitations of patient learning in their setting. “They (MI patients) would never remember any of this stuff, anyway”, “Patients are just too overwhelmed, they have to believe that they have actually had a heart attack, first”. Three ICU nurses said that they believed MI teaching in the ICU setting was a “waste of time”. The focus on items classified as ‘Actions for Survival’ in the ICU teaching was rationalized as “...if they do learn anything from us, it should be what they need to know to survive”.

Ward nurses similarly felt that the actual retention of information by patients before discharge was limited. “It’s not until they (MI patients) are in the real world that they realize what they need to know”. Two nurses expressed relief that community resources for MI patients exist to fill in these knowledge gaps after discharge. “They aren’t going to listen to me tell them how to quit smoking - I just try to plant the seed (that smoking is a risk factor, and the patient needs to quit smoking). There are experts and supports out there (in the community) for that”. One experienced nurse noted that the use of thrombolytics in the initial treatment of MI has lessened the complications from MI, and therefore, the patients’ recognition of the gravity of having had an MI. This nurse implied that the experience of MI may no longer be as immediately life-threatening (and therefore the patient is not as motivated to learn about it) until they get home and start feeling the physical repercussions. The other nurse present at the time, felt that because the patients did not feel as ill, they were actually more ready to learn about their MI in hospital (since the advent of thrombolytics).

4.5 Differences Between Nursing Groups

4.5.1 Items Ranked as “Most Helpful”.

The study findings reveal that both groups of nurses agreed on several information items to be “Most Helpful”. The items could be summarized with the phrase “Actions for Survival”, and are listed in Table 3 (p. 38). Non-parametric tests were utilized to determine the significance of any differences in the rankings for each of these items by the two nursing groups. The Mann-Whitney Test revealed there were no statistically significant differences in the way ICU nurses and 3N nurses ranked each of the “Most Helpful” items (Table 6). Of note, however are the scores for Item 54: All 3N nurses placed this item in the “Most Helpful” pile (mean and median both = 1.0). A p value of .068 indicates a difference which is nearly statistically significant at the .05 level, and is probably practically significant, based on the unanimity of the scores by the ward nurses. Three of the ten ICU nurses each ranked Item 54 uniquely - this group of nurses were not as uniform as the 3N nurses.

**Table 6: Significant Differences of Items Ranked “Most Helpful”
by ICU Nurses (n=10) and 3N Nurses (n=10)**
* denotes statistical significance

ITEM	ICU \bar{X}	ICU M	3N \bar{X}	3N M	pVALUE
54	1.4	1.0	1.0	1.0	0.068
53	1.5	1.0	1.6	1.0	0.720
56	1.9	1.0	1.5	1.0	0.534
57	2.0	2.0	1.6	1.0	0.218
55	2.2	2.0	1.6	1.0	0.253
5	2.3	2.0	2.1	2.0	1.000
28	2.3	2.0	2.2	2.0	0.813
24	2.4	2.0	2.7	2.5	0.391
2	2.4	2.0	3.1	3.0	0.245
52	3.4	3.0	2.5	2.5	0.200

NOTE: \bar{X} = mean; M = median

Intensive Care nurses included items with Anatomy & Physiology bases in the “Most Helpful” category; e.g.: “What causes chest pain”, and “How the heart heals after a heart attack”. Several teaching items related to Risk Factors and Psychosocial Aspects were included here by ICU nurses as well. Table 7 identifies HAB items ranked as “Most Helpful” by only the ICU nurses. Table 8, in contrast, lists those items which only the 3N nurses ranked as “Most Helpful”. The differences in scoring by these two groups were significant for several of the items.

**Table 7: Heart Attack Book Items Ranked “Most Helpful”
by ICU Nurses (n=10) \bar{X} score < 2.95**
* denotes statistical significance

\bar{X} SCORE	CARD NUMBER	ITEM	p VALUE
2.30	3.	What causes chest pain.	.039*
2.70	4.	How the heart heals after a heart attack.	.010*
2.80	7.	That smoking increases the risk of a heart attack.	.001*
2.90	21.	It is normal to feel fear, anger, or sadness after a heart attack.	.268.
3.00	10.	That smoking damages the heart and if I quit smoking some of this damage may go away.	.020*

**Table 8: Heart Attack Book Items Ranked “Most Helpful”
by 3N Nurses (n=10) \bar{X} score < 2.95**

\bar{X} SCORE	CARD NUMBER	ITEM	p VALUE
3.00	27.	What to do if I forget to take my medication(s).	.290

4.5.2 Items Ranked as “Least Helpful”.

There was one significant difference in the rankings of the HAB items which were considered to be “Least Helpful” by the two nursing groups:

Table 9: Significance of Differences between “Least Helpful” Rankings by ICU Nurses (n=10) and 3N Nurses (n=10)

* denotes significant pvalue

ITEM	ICU \bar{X}	ICU M	3N \bar{X}	3N M	pVALUE
6	6.2	6.0	5.6	6.0	0.203
40	5.8	6.0	5.5	5.0	0.529
44	5.8	5.5	5.3	5.0	0.288
41	5.6	6.0	5.5	5.5	0.876
32	5.6	6.0	5.5	6.0	0.813
9	5.2	5.0	5.8	6.0	0.138
58	5.4	6.0	5.2	5.5	0.585
45	5.9	5.5	4.4	4.0	.002*
16	5.4	5.5	4.9	5.0	0.177

NOTE: \bar{X} = mean; M = median

Item #45 is “Tips to manage a walking program”. The mean score for item 45 for ICU nurses was significantly different from the mean score for 3N nurses. However, the groups agreed that this item belonged in the “Least Helpful” grouping.

In addition to those items ranked as “Least Helpful” overall in Table 3, the ICU nurses were unique in including Risk Factor Modification items in the “Least Helpful” category, which the 3N nurses did not (Table 10, p. 45). Nurses from 3N also ranked several items as “Least Helpful” (also risk factor modification items) which were not included in the ICU nurses’ list (Table 11, p. 45). Significant differences were noted in the way the groups scored two of these items.

Table 10: Heart Attack Book Items Ranked "Least Helpful"
by ICU Nurses (n=10) \bar{X} score > 5.10
 * denotes statistical significance

\bar{X} SCORE	CARD NUMBER	ITEM	p VALUE
5.60	36.	Healthy ways to eat out.	.019*
5.30	37.	How to read ingredient labels on foods.	.392
5.20	17.	How I can tell if my blood pressure is high.	.696
5.10	42.	How I should feel when I exercise.	.632
5.10	39.	How to start an exercise program.	.812
5.10	13.	My blood cholesterol level.	.755

Table 11: Heart Attack Book Items Ranked "Least Helpful"
by 3N Nurses (n=10) \bar{X} score > 5.10
 * denotes statistical significance

\bar{X} SCORE	CARD NUMBER	ITEM	p VALUE
5.50	4.	How the heart heals after a heart attack.	.010*
5.20	22.	How to share my feelings if I am afraid, angry or sad.	.356
5.10	34.	The foods I need to include in my diet.	.643

4.5.3 Items Ranked as “Undecided”.

**Table 12: Significance of Differences in Rankings “Undecided”
for ICU Nurses (n=10) and 3N Nurses (n=10)**

* denotes significant pvalue

ITEM	ICU \bar{X}	ICU M	3N \bar{X}	3N M	p VALUE
14	3.7	3.0	4.4	5.0	0.092
31	3.6	3.0	4.5	4.5	0.240
4	2.7	2.5	5.5	6.0	0.01*
59	4.5	5.0	3.7	3.0	0.199

Item #4, “How the heart heals after a heart attack” was considered to be “Most Helpful” by ICU nurses ($\bar{X} = 2.70$), but “Least Helpful” by 3N nurses ($\bar{X} = 5.50$). This is a significant difference at the .01 level.

4.6 Similarities and Differences between Nurses and Patients

4.6.1 HAB Category Rankings

A random sample of data from deLeon - Demaré et al’s study of patient perceptions was utilized to calculate means for each HAB category earlier identified. The means were then ranked to determine the categories considered to be most helpful by the two groups. Table 13 summarizes these findings (p. 47):

**Table 13: HAB Category Ranked Means
Ranked by Patients and Nurses**

HAB CATEGORY	PATIENT MEAN	PATIENT RANK	NURSE MEAN	NURSES RANK
Actions for Survival	3.10	1	2.05	1
Medications	4.05	4	3.65	2
Risk Factors	4.30	7	3.76	3
Anatomy & Physiology	3.18	2	4.05	4
Psychological Aspects	3.90	3	4.39	5
Diet	4.05	4	4.58	6
Activity	4.20	6	4.60	7

NOTE: PATIENTS: deLeon-Demare et al random sample of 20 patient respondents
NURSES: current study results n = 20 nurses

Nurses and patients were found to agree on the top ranking of “Actions for Survival” as a category of HAB teaching items. There was also congruence in the ranking of the “Activity” category at the bottom of the list. An interesting difference is noted in the ranking of “Risk Factors”. Nurses placed this category third in priority; patients rated it last in priority.

4.6.2 Items Ranked “Most Helpful”

The “Most Helpful” teaching items identified by patients in the study conducted by deLeon-Demare et al are provided in Table 14 (p. 48).

**Table 14: Heart Attack Items Ranked "Most Helpful"
by Patients (n=20) \bar{X} scores < 3.15**

\bar{X} SCORE	CARD NUMBER	ITEM
2.35	33.	The foods I need to cut back on in my diet.
2.55	52.	What symptoms I should call my doctor for.
2.65	3.	What causes chest pain.
2.65	5.	What the differences between a heart attack and angina are.
2.70	60.	What symptoms the patient should call the doctor about.
2.75	54.	What actions I should take if signals of a heart attack occur.
2.95	2.	What a heart attack is.
3.05	4.	How the heart heals after a heart attack.
3.15	15.	What I can do to control my blood pressure.
3.15	53.	What the signals of a heart attack are.

The list of "Most Helpful" items for patients is similar to that produced by the nurses (Table 3, p. 38). Mean scores are higher in the patient group, and three of the "Actions for Survival" items scored > 3.15 as a result. Therefore, these items did not appear in Table 14. A random sample of 20 participants from the deLeon-Demaré et al study was collected in order to produce this ranking, which does differ from the results obtained in the original study (n=100). The significance of any differences in the rankings of these items by patients and nurses were also calculated from the random sample. The p values of the Mann-Whitney Test for the "Most Helpful" ranking are given in Table 15 (p. 49).

**Table 15: Significance of Differences in Rankings “Most Helpful”
for Nurses (n = 20) and Patients (n = 20)**

* denotes significant p value

ITEM	NURSES' \bar{X}	PATIENTS' \bar{X}	P VALUE
33	3.85	2.35	0.001*
52	2.95	2.55	0.496
3	3.00	2.65	0.624
5	4.10	2.65	0.236
60	3.25	2.70	0.162
54	1.20	2.75	0.000*
2	2.75	2.95	0.639
4	4.10	3.05	0.131
15	4.15	3.15	0.034
53	1.55	3.15	0.001*

NOTE: PTS \bar{X} = mean of random sample of patient data

Significant differences were found for three of these items. Patients felt that #33: ‘The foods I need to cut back on in my diet’ was “Most Helpful”, but nurses did not. In contrast, nurses felt that #53: ‘What the signals of a heart attack are’ and #54: ‘What actions I should take if signals of a heart attack occur’ were significantly more helpful than patients did in relation to other HAB items.

4.6.3 Items Ranked “Least Helpful”

A comparison of the contents of Table 4 (p. 39) and Table 16 (p. 50) demonstrates a number of differences in the items which were ranked as “Least Helpful” by nurses and patients. Table 17 (p. 50) provides the p values calculated to determine significance of these differences, again utilizing a random patient data sample.

**Table 16: Heart Attack Items Ranked “Least Helpful”
by Patients (n = 20) \bar{X} score > 5.05**

\bar{X} SCORE	CARD NUMBER	ITEM
5.90	9.	Where I can go to learn to stop smoking.
5.95	8.	How to stop smoking.
5.80	10.	That smoking damages the heart and if I quit smoking some of this damage may go away.
5.50	7.	That smoking increases the risk of a heart attack.
5.05	58.	That “nitro” are not habit forming.

**Table 17: Significance of Differences in Rankings of “Least Helpful”
for Nurses (n = 20) and Patients (n = 20)**
* denotes significant p value

ITEM	NURSES' \bar{X}	PATIENTS' \bar{X}	P VALUE
9	5.50	5.90	0.113
8	4.90	5.95	0.007*
10	3.80	5.80	0.000*
7	3.70	5.50	0.000*
58	5.30	5.05	0.286

NOTE: PTS \bar{X} = mean of random sample of patient data

Items #7, #8 and #10 were noted to be ranked significantly differently by nurses and patients. These were items containing information to aid patients in quitting smoking.

4.6.4 Items Ranked "Undecided"

A comparison of Tables 5 (p. 40) and 18 will also demonstrate a difference in the items ranked as "Undecided" by patients and nurses. P values for these differences (calculated from a random sample of patient data) are provided in Table 19.

Table 18: Heart Attack Book Items Ranked "Undecided" by Patients (n = 20) \bar{X} score 3.9 - 4.1

\bar{X} SCORE	CARD NUMBER	ITEM
4.10	35.	Healthy ways to cook.
4.05	27.	What to do if I forget to take my medication(s).
3.90	39.	How to start an exercise program.
3.90	22.	How to share my feelings if I am afraid, angry or sad.
3.90	21.	It is normal to feel fear, anger, or sadness after a heart attack.
3.90	6.	What other tests my doctor may order in the weeks to come.
3.90	1.	How the heart works

Table 19: Significance of Differences in Rankings of "Undecided" for Nurses (n = 20) and Patients (n = 20)
* denotes significant p value

ITEM	NURSES' \bar{X}	PATIENTS' \bar{X}	P VALUE
35	3.70	4.10	0.208
27	3.25	4.05	0.040*
39	4.95	3.90	0.047*
22	4.85	3.90	0.098
21	3.25	3.90	0.095
6	5.90	3.90	0.000*
1	4.60	3.90	0.211

NOTE: PTS \bar{X} = mean of random sample of patient data

There were three items ranked significantly different by nurses and patients in the "Undecided" grouping. Patients felt that knowing about tests to anticipate and how to start an exercise program were more helpful than nurses did. In contrast, nurses felt that patients should know more about what to do if medications were forgotten.

4.7 Summary

Findings from this study indicate that overall, ICU and 3N nurses agree that Actions for Survival is the “Most Helpful” category of items for patients to learn. These nursing groups also ranked the categories of Anatomy and Physiology, Risk Factors and Medications within the next three most helpful categories. Significant differences were found for only six individual items within those categories.

Nurses and patients were also found to agree with the top ranking of Actions for Survival as a category. Significant differences were found for two items within the category, which nurses ranked much higher than the patients did. Nurses and patients ranked the Risk Factor category very differently, with patients placing it seventh in priority of the seven categories. Within this category, there were significant differences in the rankings of items related to smoking cessation and diet restrictions.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

This chapter will discuss the results of the ranking of Heart Attack Book instructional items from the nurses' perspective. Findings in this study will be compared to the literature and to those of deLeon-Demaré et al who studied patient perceptions. The implications of the study will be discussed under the headings: 1) discussion of findings, 2) strengths and limitations of the study, and 3) implications for nursing research, education and practice.

5.2 Discussion of Findings

5.2.1 Nurses' Rankings of HAB Items

The purpose of this thesis was to determine nurses' perceptions of the relative importance of individual items being taught to post-MI patients from the Heart Attack Book. The present health care climate in Manitoba (and elsewhere) is dwindling the time available to nurses to engage in patient teaching activities. Nurses increasingly must streamline their teaching strategies, often focusing on content they deem to be the most helpful for the patient to learn. Whether the decision to eliminate or minimize certain content areas is an individual decision made by the nurse, or one made in conjunction with the patient, will vary with the circumstances. Understandably, this is a situation with which every nurse has had some experience once involved in MI teaching. Nurses were asked to draw on this experience when ranking the HAB items into piles of relative helpfulness to the patient. The piles were restricted in size. The nurses participating in this study were employed at the Grace General Hospital in Winnipeg.

Patients admitted to the Grace Hospital with the diagnosis of acute myocardial infarction begin their stay in the Intensive Care Unit for typically 24-72 hours (assuming no complications). From the ICU, stable patients are then transferred to the Medical Ward (3 North) for the remainder of their hospital stay (2 - 5 more days). At this facility, post-MI patient education rarely occurs outside these two settings. The Heart Attack Book is the main resource utilized in instruction. Each MI patient receives a copy of this manual. Sections of the manual are reviewed with patients by the following disciplines: Nurses, Pharmacists, Physiotherapists and Dieticians.

Study participants were a convenience sample (self selected volunteers) who were permitted time away from their duties to complete the Q-sort procedure. Nurses from the ICU were significantly older and had significantly more MI teaching experience than the nurses from 3N. All were female. The ICU nurses in general had a higher level of education, but not a significant difference from the 3N nurses. These findings are typical of nurses employed in these two settings.

The HAB teaching items chosen as the 10 "Most Helpful" by all nurses (Table 3, p. 38) were items classified as "actions for survival", "anatomy and physiology" and "medications". All seven HAB items in the study classified as "actions for survival" were included in the "Most Helpful" category by nurses overall. There was no significant difference in the ranking of these items between the ICU and 3N nurses. This result is in keeping with those of prior studies examining MI patient teaching by nurses. Gerard and Peterson (1984), Karlik and Yarcheski (1987), and Casey, O'Connell and Price (1984) all found that nurses highly ranked teaching about information necessary for recognizing and dealing with chest pain and complications. The emphasis on this information is logical and reassuring, as patients experiencing one MI are at risk for future recurrences. Early recognition of symptoms and prompt treatment are proven to lower the mortality rate from MI (Raleigh and Odtohan, 1987). Patients who are knowledgeable and who also have current experience with MI

symptoms are much more likely to seek medical care in a timely manner. Therefore, this education may save lives. In situations where teaching is limited, e.g.: the very elderly, this information may be the only section of the HAB which is addressed.

The most common top priority for patient teaching in the literature was not “actions for survival”, but rather “medications”. Nurses in each of the 1984 studies ranked medications as the most important content area to be taught. Both Coronary Care Unit (CCU) and post-CCU nurses in Gerard and Peterson’s study gave medication instruction top priority. The cards to be sorted in the present study included ten (10) items pertaining to medications. Two of these were ranked as “Most Helpful” by nurses overall, and a third was considered to be in that category by the 3N nurses. The former items: “Why each medication is taken” and “How to take my medications” are generally accepted as essential for patients to know (Dodge, 1972). Medication instruction is completed by a pharmacist as part of the teaching protocol at Grace Hospital, but was performed by nurses participating in earlier research studies. Nurses in this study apparently still prioritized medication information as important for the patient to know, and some may include this content in their own teaching. The latter item, “What to do if I forget to take my medications”, was ranked significantly higher by 3N nurses, who are typically preparing the patient for discharge. Post-discharge is the only time this item would become an issue, as medication administration is a nursing responsibility while the patient is in hospital. It is logical that this item would be a low priority in the ICU setting.

Medication items from the card sort which were more neutrally ranked were pertaining to side effects, the dangers of stopping medications, the effect of alcohol on medications, and the role of the community pharmacist in answering patient questions. The item “That ‘nitro’ are not habit forming” was included in the “Least Helpful” list. Several nurses laughed while reading this item, noting they felt that this was common knowledge. It is not known if nurses felt pharmacists adequately covered the topics

they had ranked lower, or if they felt these were less of a priority overall. Several nurses made verbal comments that they would not know what to teach the patient regarding this subject matter, and therefore had prioritized them lower. Overall, medications were ranked second out of the seven categories of HAB items by nurses in this study.

HAB items classified as risk factor identification and modification strategies numbered 14 in this study. Of these, content was distributed as follows: smoking (4); cholesterol (3); hypertension (5) and stress (2). Overall, these items were ranked third in helpfulness for post-MI patients to learn. This is an encouraging difference from the Gerard and Peterson study (1984), in which nurses ranked this category as one lowest in priority, but their CCU and post-discharge patients had ranked it as the most important one to learn. Karlik and Yarcheski's replication study three years later demonstrated changing nurse attitudes toward risk factor education, as CCU nurses ranked it third out of the 8 Cardiac Patient Learning Needs Inventory (CPLNI) categories. The present study produced similar findings. Several nurses who participated in the study made comments that they were aware of the aforementioned results. These nurses were members of a committee which had reviewed MI teaching at the hospital approximately six months prior. It is encouraging that nursing research is being communicated to and utilized by some bedside nurses. However, it is disappointing that this information was not shared with all nurses involved in MI patient teaching.

None of the risk factor items individually made the top 10 "most helpful" list for the nurses as a whole. The averaged means placed these topics in the following order (most helpful to least helpful): stress, smoking, hypertension, then cholesterol. This order may represent: 1) those factors which are believed to influence the greatest number of patients; 2) those factors which are believed to be most likely to increase MI risk; or 3) those factors which nurses believe they can influence patients to change through teaching. Several nurses commented that they felt teaching about risk factors, in

particular, smoking, would be more effective post-discharge. Smoking cessation education may be more effective once the patient is engaged in this potentially damaging behavior at home, as patient behavior is controlled while in hospital (Steele and Ruzicki, 1987; Hentinen, 1986). Conversely, some authors postulate that smoking cessation instruction is most pertinent when the patient is forced to quit by the hospitalization experience (Taylor, Houston-Miller, Killen, and DeBusk, 1990). ICU nurses may have been attempting to initiate interest in the smoking topic; two smoking items had low mean scores within the ICU subgroup. “That smoking increases the risk of a heart attack” ($\bar{X} = 2.8$) and “That smoking damages the heart and if I quit smoking some of this damage may go away” ($\bar{X} = 3.0$). Since smoking behaviors among the nurses surveyed was not assessed, it is impossible to determine if personal smoking activity influenced the nurses’ responses.

Stress and smoking education may have been emphasized by nurses because these are risk factors which only the patient themselves can alter. Hypertension and hypercholesteremia are risk factors which additionally have a medical treatment component. Nurses and patients alike may view physicians as a more appropriate resource in these areas. Tilley, Gregor and Thiessen’s (1987) study of preferred instructors provides support to this premise.

Nurses in Gerard and Peterson’s study ranked “anatomy and physiology” fifth (CCU nurses) and eighth (post-CCU nurses) in priority out of eight teaching categories in the CPLNI ($p = 0.003$). Similarly, nurses in the present study ranked it fourth out of the seven categories. The card sort included six A&P items for nurses to consider. Two of these items were ranked as “Most Helpful”: “What the differences between heart attack and angina are” and “What a heart attack is”. Two further items were so ranked by only the ICU nurses: “What causes chest pain” and “How the heart heals after a heart attack”. A significant difference was found between ICU and 3N nurses for the latter item. ($p = 0.01$). Nurses commented that patients needed some A&P in order to

understand the medications and diet and activity restrictions that were being imposed on them. Additionally, nurses noted that this is one area that would be omitted in the teaching of elderly patients who would have difficulty learning large quantities of content. An item taught in this section, “What other tests my doctor may order in the weeks to come” was ranked as the least helpful item overall in the card sort. ICU nurses noted that this was not important information for acutely ill patients to be bothered with while in their area. The number and diversity of possible diagnostic tests would also make this information overwhelming, difficult to teach, and not appropriate for every patient.

The averaged mean of the two “Psychological Aspects of MI Recovery” items was in the ‘neutral’ range. These were considered to be the fifth most helpful of the HAB categories. Interestingly, one item was ranked significantly higher than the other: item 21 “It is normal to feel fear, anger or sadness after a heart attack” ($\bar{X} = 3.0$); versus item 22, “How to share my feelings if I am afraid, angry or sad” ($\bar{X} = 4.85$, $p = 0.041$). Nurses are educated to encourage patient expression of feelings, and to validate such emotions as normal. Few nurses, however, venture into the area of counseling patients on how to express their emotions, which may provide explanation for this difference.

The categories of “Diet” and “Activity” were the least helpful of the seven groups of HAB items. The averaged means of 4.58 and 4.60 respectfully, place these categories in the “neutral” range. This is fairly consistent with the literature, in which nurses involved in two out of three studies ranked diet and activity instruction as less important than other areas. The teaching involvement of dieticians and physiotherapists at the Grace Hospital may influence the current results in “diet” and “activity”. Nurses may perceive that these disciplines adequately cover the required content. Additionally, both diet and exercise are carefully controlled while the patient is hospitalized. Nurses may believe that their patients learn about restrictions by what types of food they are served, and by what activities they are permitted and encouraged to engage in. Diet

instruction is conducted with the family member primarily responsible for meal preparation (typically, a wife), in addition to the patient. These spouses are encouraged to contact the dietary department directly if and when questions arise. Nurses rarely receive queries related to this knowledge area. Furthermore, anatomy and physiology and risk factor education may be viewed as prerequisites to understanding the limitations being set in relation to diet and exercise.

The basic nursing education programs of the participants in this study may have influenced their lower ranking of diet and activity items. The majority of nurses were Diploma prepared. Within the time constraints of their programs, these nurses may have received less instruction related to these topics, and thus perceived themselves as less competent to teach patients the content. The education levels of the two groups were not statistically different, and correlations between education level and category rankings were not determined in this study. A combination of all of these factors may have resulted in the low ranking of these two categories relative to the others.

Table 20 (p.60) provides a comparison of the ranking of HAB teaching item categories with categories similarly labeled in prior studies.

**Table 20: Comparison of Informational Categories
Ranked by Nurses between Studies**

INFORMATIONAL CATEGORIES	STUDY #1	STUDY #2	STUDY #3	STUDY #4
Actions for Survival	3(a)	4(b)	6(a)	1
Medications	1	1	1	2
Risk Factors	6	2	3	3
Anatomy & Physiology	7	4(b)	8	4
Psychological Aspects	5	2	4	5
Diet	8	6	7	6
Activity	2	5	5	7
Introduction to CCU(c)	4	n/a	2	n/a

STUDY #1: Gerard & Peterson (1984) Combined CCU and post-CCU nurses n = 36

STUDY #2: Casey, O'Connell & Price (1984) CCU nurses only n = 33

STUDY #3: Karlik & Yarcheski (1987) CCU nurses only n = 15

STUDY #4: current study - Combined ICU and ward (3N) nurses n = 20

NOTES:

(a) Actions for Survival items were grouped into a category titled 'miscellaneous'

(b) Actions for Survival and A&P items were grouped into a category titled 'the occurrence of MI'

(c) Studies #2 and #4 did not include this category

5.2.2 Nurse - Patient Congruency

The parallelism of the "Most Helpful" lists produced by each of two nursing groups in the current study, and a sample of heart attack patients (deLeon-Demaré et al) is noteworthy. Five teaching items identified by patients as being most helpful are included in the same ranking by the nurses. These items are summarized by the terms "Actions for Survival" and "Anatomy and Physiology" (Table 21, p. 61).

Table 21: Items Consistently Ranked as “Most Helpful” by Nurses and Patients

CARD NUMBER	ITEM
54.	What actions I should take if signals of a heart attack occur.
53.	What the signals of a heart attack are.
5.	What the differences between heart attack and angina are.
52.	What symptoms I should call my doctor about.
2.	What a heart attack is.

A focus on “actions for survival” by both nurses and patients is reassuring, as previously noted. Early recognition of symptoms and prompt medical treatment have been demonstrated to reduce mortality from MI. Patients who have experienced a first MI have often delayed treatment, either failing to recognize the serious nature of their symptomatology, or by experiencing denial of the possible sources for those symptoms. Both behaviours are well documented as common to coronary patients (Boyd and Citro, 1988; Gibson, 1987). Once faced with the diagnosis of “heart attack”, patients often express first disbelief, and then gradual acceptance. Patients and significant others then perceive the meaning of the symptoms they experienced, and may encounter guilt for having delayed treatment. This time of revelation is often seized by nurses as an opportunity to initiate teaching regarding the “actions for survival”. Knowles’ *Principles of Adult Learning* (1980) theory proposes that adults learn optimally when they perceive a gap in their knowledge, when the knowledge is immediately applicable, and when they can build upon prior learning experiences. Knowles’ widely accepted theory of adult learning supports the nurses’ intervention at this time in post-MI patient recovery.

The congruence regarding the value of “actions for survival” items between nurses and patients appears to be isolated. Means for each HAB category are ranked in Table 13 (p. 43). Nurses in the current study and patients in the deLeon-Demare et al study conducted one year previous are contrasted. Nurses and patients agreed on the top ranking of “Actions for Survival”, but disagreed on the ranking of “Risk Factors”.

Within the risk factor category, significant differences in the ranking of smoking cessation items were noted. Nurses were found to rank these items higher than patients, as they did for the whole category. Perhaps nurses rank risk factor information higher because they view it as valuable in preventing future MIs. Perhaps patients rank this information lower due to distaste for the life-style changes the information reminds them of. Since neither the nurses' nor the patients' smoking behaviors were assessed, it is impossible to speculate on the possible influence of non-smokers attempting to teach smokers that the habit must be quit. This author speculates that nurses feel risk factor information is more helpful to learn because they are not personally required to change their own risk factors in order to recover from MI.

The literature is replete with studies which suggest nurses and patients are often focused on differing learning priorities (Linehan, 1966; Dodge, 1969 & 1972; Lauer, Murphy & Powers, 1982). Nurses were found to concentrate on general information, which would be safe to teach each and every patient. Patients in contrast, desired content to be related to their personal current condition (e.g.: immediate self care needs, how to minimize the effects of therapy). However, subsequent to the development of the Cardiac Patient Learning Needs Inventory (CPLNI) by Gerard and Peterson in 1984, studies have found increased harmony between the two groups (Karlik & Yarcheski, 1987; Casey, O'Connell & Price, 1984). Table 22 (p. 63) provides a comparison of patients' perceived learning needs since 1984 with the perceptions of nurses in the present study.

**Table 22: Comparison of Patient Rankings of MI Teaching Categories
1984 - 1997 with Nurse Rankings 1997****

TEACHING CATEGORY	1984 STUDY #1	1984 STUDY #2	1987 STUDY #3	1996 STUDY #4	1997** STUDY #5
Actions for Survival	5(a)	4(b)	5(a)	1	1
Medications	2	2	3	4	2
Risk Factors	1	3	1	7	3
Anatomy & Physiology	7	4(b)	2	2	4
Psychological Aspects	3	1	8	3	5
Diet	8	5	7	4	6
Activity	4	3	6	6	7
Introduction to CCU (c)	6	n/a	4	n/a	n/a

STUDY #1: Gerard & Peterson (1984) CCU patients n = 16

STUDY #2: Casey, O'Connell & Price (1984) Patients 4-7 days post-MI n = 30

STUDY #3: Karlik & Yarcheski (1987) CCU patients n = 15

STUDY #4: deLeon-Demaré et al (1996) Patients n = 20

STUDY #5: current study (1997) ICU & ward nurses n = 20

NOTES: (a) Actions for survival were included in a category titled "Miscellaneous"

(b) Content was included in a category titled "The occurrence of MI"

(c) Studies #2, #4 and #5 did not include this category

The categories of "Medications" and "Risk Factors" were consistently ranked in the top three most important by patients in the early studies. However, these have both dropped into lower-valued categories by deLeon-Demaré et al's study in 1996. Interestingly, nurses' responses in 1997 were closer to the patients' 1987 desires than they were to the current study results from 1996. Aside from the "Actions for survival" category, nurses who participated in this study may not be meeting patients' desired learning needs. Rather, nurses appear to be basing their teaching priorities on research data gathered a decade ago.

Several explanations for this phenomenon are postulated:

1) Nurses are aware of the research findings of Gerard & Peterson (1984) and/or Karlik & Yarcheski (1987), either by direct exposure to the results (e.g.: have read the journal articles), by indirect exposure to the results (e.g.: the content is included in orientations

or inservices), or by inclusion of this content in their basic nursing education (applicable to only one half of the nurses, who have graduated since 1984). This is a positive explanation, as the current prevalent belief is that bedside nurses for the most part are unaware of nursing research contributions to our knowledge base, and therefore, underutilize such knowledge. This explanation for the study results should alleviate the profession's need for concern.

The nurses may be at least partially aware of the research findings of deLeon-Demaré et al. Members of this research team presented their preliminary results at the Grace Hospital in May of 1996. The thesis author was present for this discussion, but is unaware if any subjects from the current study were also in attendance. This variable was not assessed in the questionnaire. The congruence of the top ranking of "actions for survival" items by both patients and nurses may have been a result of nurses' exposure to the deLeon-Demare results. Significant differences in the rankings of other categories reduces the likelihood of this being true, however. Another possibility is that nurses who attended the session recalled only fragments of the information presented.

2) A second possible explanation for the nurses' responses reflecting mid-1980's research findings is the format of the Heart Attack Book itself, which was originally published in 1988. Items chosen from the 1988 HAB were utilized in developing the cards which were sorted for each of the latter two studies. Each of the studies were conducted prior to wide utilization of a revised version of the HAB, in 1996. In fact, findings from the deLeon-Demaré et al study were considered in the finalization of the 1996 revision. The 1988 manual reflected earlier research findings, and was still the manual in use at the Grace Hospital when the current study was undertaken. Nurses involved in MI teaching employ the HAB directly - patients are given personal copies, and nurses and other disciplines refer directly to content within the book. Nurses'

priorities may have been influenced by the sequencing and emphasis of content within the Heart Attack Book.

An additional possible influence of nurse perceptions is the “MI Teaching Record” (Appendix I). This document is a part of the permanent patient record upon which nurses and others document content areas completed as teaching progresses. Categories for teaching are listed in bold-face type. Each category is followed by a number of detailed statements which capture essential knowledge the patient should understand within the category. The signature of the instructor and the date of the instruction are placed beside each statement as they are concluded. Nurses and members of other disciplines refer directly to this form while conducting patient teaching sessions. The sequencing, statements utilized to elaborate on categories, and the need to document with signature that a given patient ‘understands’ the descriptive statement may all influence which of the categories and statements nurses choose as most helpful for the patient to learn.

3) Nurses in this study may be recounting their own knowledge base when identifying the most helpful content for patients to learn. Nurses are educated in the current protocols for assessing and treating patients experiencing chest pain, both in their basic nursing education and in orientation to the setting in which they are employed. ICU and 3N at the Grace Hospital have standing orders for the treatment of such complaints with rest, oxygen therapy and sublingual nitroglycerine. Furthermore, Basic Rescuer Cardiopulmonary Resuscitation is a requirement of nursing employment at the Grace. This program, developed by the Heart & Stroke Foundation of Manitoba, requires knowledge of MI symptomatology and identification of appropriate actions for engaging EMS services for certification. Such knowledge is also reflected in the “actions for survival” content of the HAB. Thus, nurses may simply be emphasizing the information which has been repeatedly noted to be valuable for patients to learn.

In similar fashion, nurses' failure to emphasize content related to psychological aspects of MI, diet and activity content, may be a result of nurses' relative lack of expertise in these areas. Nurses have traditionally received little instruction of this content in their basic nursing programs. Recent controversy and research (e.g.: the role of serum cholesterol levels in MI prevention) further compounds this. Many nurses feel their knowledge is insufficient to properly instruct others. As previously noted, clinical dietitians and physiotherapists are included in the teaching program for post-MI patients at the Grace Hospital, and other hospitals across the province. These members of the teaching team are considered to be experts in their disciplines. Each post-MI patient is referred to both dietary and physiotherapy while an in-patient, and is encouraged to continue utilizing these departments as resources following discharge. Nurses have had little need to become involved in these aspects of patient teaching.

A frequently overlooked influence on nurses' perceptions is the role that nurse's personal experiences play in the care they provide to others. Nurses, who practice both a science and an art, draw on more than formal education as they plan and carry out their interventions, including teaching. Nurses in this study may have formulated opinions regarding what is helpful for the patient to learn from experiences unrelated to their nursing careers. Nurses in this study may have personally suffered from MI, and thus developed a conception of what was and what was not helpful to know. Nurses may have a significant other who suffered from MI. The experiences of this person may contribute to the nurse's knowledge. Additionally, nurses may have formally or informally polled post-MI patients on this topic in the past. Finally, nurses in this study may have been exposed to such information in the popular literature. Newspapers, magazines, self-help books, and popular bestsellers all potentially contain similar information. Electronic media cannot be disregarded: radio, television and the Internet are additional possible resources. The current study did not attempt to identify the sources of the nurses' perceptions. Assuming that nurses were able to recognize outside

influences on their choices, it would be erroneous to attempt to ascertain the quantity of effect each life experience had contributed.

5.2.3 All MI Teaching is Helpful for the Patient

Nurses and patients have frequently identified all categories of teaching information included in the CPLNI to be important for the patient to learn (Karlik & Yarcheski, 1987; Wingate, 1990; Chan, 1990; Moynihan, 1984; Hanish, 1993). Nurses in the present study often verbally indicated that they felt all of the items they were ranking would be “helpful” for the patient to learn. Comments made were frequently of a frustrated nature, as participants were required to classify a certain number of the items as “less helpful” by the study methodology. A standard explanation, reminding the nurses that the premise of the study was the need to prioritize teaching due to limited time resources, was often enough to alleviate this concern. The nurses did indicate that they were loathe to have to remove any content from the teaching that is performed, except in unusual circumstances. It was also noted that if content was not covered in one setting (e.g.: ICU) due to lack of time or patient condition, it was believed that nurses in the other area (3N) would be made aware. This continuity of teaching is ensured at the hospital by use of the “MI Teaching Record”. The instrument is a part of the permanent patient record. All disciplines who contribute to the patient’s knowledge base document on this form. It is understood that all areas of the form are to be completed prior to the patient’s discharge from hospital, demonstrating that all teaching has been concluded. The emphasis on completion of the “MI Teaching Record” prior to discharge may contribute to the concern nurses expressed that everything is helpful for the patient to learn.

5.3 Strengths and Limitations of the Study

The value of a descriptive study is related to the reliability and validity of the measurements being used (Brink and Wood, 1989). The Q-sort procedure has demonstrated reliability in prior nursing research studies utilizing 50 to 60 items (Dennis, 1986). The HAB Q-sort containing 60 items was developed by deLeon-Demaré et al (in press) for the purpose of assessing post-MI patient perceptions of the relative helpfulness of HAB teaching items. Validity was established in the development of the HAB Q-sort by those investigators. The reliability and validity of the HAB Q-sort were supported by the results of this study.

However, a number of limitations of this study have been identified. They are as follows:

1. small sample size. It is difficult to determine if the results obtained in the HAB Q-sort of Grace Hospital nurses is truly reflective of the perceptions of nurses involved in post-MI patient teaching in other settings. The samples of 10 nurses from each ICU and 3N are possibly generalizable to other nurses working in these settings, as the total number of registered nurses working in these areas each number 28.

2. use of volunteers. The use of volunteers introduces the inherent possibility that data will be polarized and not truly reflect what generally tends to occur. It is possible that nurses sharing one opinion all volunteered for this study, and that nurses who had varied opinions chose not to participate.

3. social desirability bias. The fact that the researcher has been employed in both of these settings, although not at the time of the study, may have altered the data. The researcher was acquainted with each participant. Although the researcher provided written and verbal reassurances of confidentiality, nurses may have chosen whether to participate or not based on their familiarity with the researcher. As well, nurses' responses may have reflected this bias, despite advisements that the data they provided would be linked to demographic information only by a number.

Additionally, in the interest of time, two nurses completed the card sort simultaneously. Each nurse was given their own pile of cards, and interaction was discouraged. However, some discussion did ensue, which may have caused individual nurses to alter their card sort.

4. complexity and nature of the card sort. On several occasions, nurses requested clarification of the card sort procedure. Instructions were read verbatim from the procedure, but when questions arose, the researcher would clarify using her own words. It is possible that the researcher's rephrasing may have unintentionally introduced bias. •

The nature of the card sort was frustrating for some of the participants. Several nurses had difficulty identifying HAB teaching items as "Least Helpful". They felt that all items were helpful for post-MI patients to learn. Similarly, nurses disliked the forced limiting of pile sizes. Nurses stated that they may have been more comfortable following their 'gut instincts' and simply placing each item into the appropriate pile, without having to worry that the pile was of the wrong size. There were several occasions when the researcher had to provide reassurance to participants, which may have also introduced prejudice.

The complexity of the card sort procedure may also have contributed to fatigue among participants. Although nurses were advised that their involvement could require 30 - 45 minutes, many were surprised to find that it did require that amount of time. Several noted that the process was fatiguing. Nurses may have considered each card sort item with less vigor if they were experiencing weariness with the process.

5. forced limitation of pile sizes. The methodology employed in this study required nurses to choose only a set number of cards within each category. The "normal distribution" pattern was utilized. Five cards could be placed in the extreme piles ("most" and "least helpful"); seven in the next category, and 13 in those on either side of "uncertain". The remaining ten cards were to complete the "uncertain" pile (see

Appendix F). Nurses expressed frustration at being required to limit pile sizes. Several noted that, due to lack of flexibility, they were forced to place items into “uncertain” or “unhelpful” categories, although they felt the content was helpful for patients to learn. The author speculates that the extreme categories probably do reflect nurses’ perceptions accurately, but as the central grouping is approached, the nurses’ opinions may not be scrupulously captured in the card sort results.

6. location and timing of data collection. Nurses had been allowed away from their work responsibilities in order to complete the HAB Q-sort. A time of day generally accepted as ‘relatively quiet’ was chosen. A setting near the patient care area was utilized, for the possibility that nurses were needed in an emergency situation. The nurses’ absence from their duties required that their co-workers accept responsibility for the participants’ patients. Concerns about overloading their co-workers potentially caused some participants to make mechanical rather than conceptual choices in the card sort in order to complete the process sooner. The location in close proximity to their workplace may also have contributed to a lack of total concentration on the procedure.

7. attendance at the presentation of study results by deLeon-Demare et al. The information presented by researchers who studied patient perceptions may have influenced the opinions of nurses participating in the card sort. However, it is not known if any nurses who completed the present study were in attendance at the presentation by deLeon - Demare et al. The accuracy of recall of the presented information may have lessened this issue, as the presentation occurred a full year prior to data collection.

5.3 Implications for Nursing

5.3.1 Nursing Education

An important implication for nursing education is to continue the introduction of, and to strengthen the focus on, adult learning principles in general nursing programs.

Patients must continue to be treated as adult learners in matters concerning their illness and recovery trajectories. Patients enter the illness experience with a wealth of life wisdom: information gathered from prior encounters with the healthcare system, the media, loved ones and acquaintances. As adults, they must be allowed to survey the information being offered and to choose to focus on that which is the most valuable to themselves. If nursing students are to become effective patient educators as nurses, they must understand the role that the adult learner wishes to take in this learning process, and learn to foster that role. Nurses who support the patient as an active participant in his learning, and who aid the patient to identify which information is most pertinent to them personally, will make the largest impact on their patients' knowledge level, and thus their long-term health.

A second implication highlighted by this research study is the questionable value of including related disciplines' knowledge in nursing education. Nursing curricula continue to include general and perhaps out-dated content related to nutrition and activity. Nursing students are led to believe that they have gained valuable knowledge in these areas, yet find that they are unable to counsel patients effectively in the clinical setting. This study demonstrated that nurses felt compelled to educate patients about dietary restrictions and allowances, yet lacked the ability to truly do so. A similar generalization could be made regarding the content related to activity and medications. This perhaps originates in nurses' traditional difficulty in defining their practice, and acquiescing knowledge to other professions. The interdisciplinary approach utilized in the education of post-MI patients provides support that nursing knowledge cannot supply all the information patients need. Other experts are available in the healthcare setting. These professionals fully understand the role their knowledge can play in recovery from MI, and prevention of recurrence. They are familiar with recent developments in their field(s). Nurse educators should acknowledge that beyond the

nutrition and activity information necessary for maintenance of general health, more detailed instruction is beyond the scope of nursing programs.

A third implication for nursing education is the need to include exposure to current research projects in the curriculum. This is an area which is beginning to be addressed to some extent. Scholarly activities are currently being required of nursing instructors in many programs. Such a prerequisite brings students and researchers closer together for dialogue and information dissemination.

5.3.2 Nursing Practice

The study of nurses' perceptions of information needs of post-MI patients provides several implications for nursing practice as it relates to the education of these patients. First, this study provides evidence that nurses may be emphasizing content from the HAB categorized as "actions for survival". This teaching content includes information necessary for the patient to identify and recognize symptoms related to heart attacks and angina. It provides instruction on proper procedure to follow upon recognition of these symptoms. Prompt access to medical intervention is valued as a means to reduce morbidity and mortality. Providing this potentially life-saving information to patients was ranked as the "most helpful" information for patients in this study. The emphasis on "actions for survival" is supported by recent research conducted with post-MI patients, who similarly ranked this information. The congruence in rankings by these two groups (patients and nurses) is reassuring. Nurses are providing post-MI patients with information they desire. They are fulfilling one of Knowles' Principles of Adult Learning (1980).

A second implication for nursing practice is that nurses must update their knowledge base with current research findings. Nurses are currently emphasizing HAB teaching categories that were important to patients in studies conducted 10 to 15 years ago. With the exception of the "actions for survival" category, today's nurses are not providing

patients with the information they deem to be most helpful. Unfortunately, opportunities to be informed about recent knowledge developments are either not well attended, or those who do attend do not share new information with colleagues. Nurses must become more diligent in producing, sharing and seeking new nursing knowledge.

A third implication of this study is that nurses must continue to individually assess patients for the information they most desire to learn. Nurses commented that although they were forced to generalize their responses in this study, they do try to determine what content will be a priority for each patient. Patients who perceive the information they are receiving is personally applicable are more likely to internalize the content. In addition to desired content, the nurse must also assess the patient for present knowledge base (in order to build upon it), and the patient's preferred learning style.

5.3.3 Nursing Research

Recommendations for future research are suggested on the basis of the findings of this study. The first recommendation is to replicate the HAB Q-sort procedure with a larger sample of nurses from various settings to determine if the perceived information needs of patients are consistent with this study's findings. Additionally, the HAB Q-sort could be used with nurse and patient samples drawn from the same setting (e.g.: obtain perceptions of nurse-patient dyads). Pairing the nurse with a patient would reduce the nurses' need to generalize their responses. To most accurately draw conclusions about changing nurse and patient opinions from past research, the Cardiac Patient Learning Needs Inventory (CPLNI) could be administered with a current sample from each group. Alternatively, the HAB Q-sort could be repeated at a future date, to ascertain changing nurse/patient perceptions over time.

To strengthen the reliability and validity of the Q-sort technique, triangulation with a qualitative component is recommended. Forcing the subjects to choose small numbers of "most" and "least helpful" items perhaps identified those which they felt the most strongly about. Ambiguous and less definite opinions may have been lost within the

sorting technique. The addition of qualitative measures may capture subjects' true perceptions of each HAB item. Permitting participants to alter pile sizes and/or pile labels may also reduce the bias inherent in this methodology.

Future studies are also needed to identify the methods of education which are preferred by post-MI patients, and whether nurses are able to meet those demands. Spouses of MI patients should also be studied to determine their learning needs, their preferred methods of receiving information, and nurses' role in educating these significant others.

Finally, this study could be replicated with patients experiencing other cardiac events or interventions. Nurses are active participants in educating these patients (e.g.: congestive heart failure, angioplasty, by-pass surgery). The effectiveness of the education should be assessed.

5.4 Conclusions

The aim of this study was to identify which information nurses perceived to be most helpful for the post-MI patient to learn, based on the current MI teaching program in use. The results of this study indicate that nurses appropriately prioritize content described as "actions for survival" in educating these patients. Nurses from both an ICU and a ward (3N) setting identified this as the most helpful information for their patients to learn. A recent study of post-MI patient perceptions, utilizing the same methodology, identified that patients have the exact same priority. The congruence of the two studies is reassuring, leading the researcher to conclude that patients are receiving the most valuable information, which may reduce their morbidity and mortality from MI.

Other HAB content categories were prioritized by nurses in this study in a manner similar to studies conducted with patients a decade earlier. The implication of this finding, that nurses' knowledge is based on dated research, is both encouraging and

disappointing. It is encouraging in that nurses are aware of past nursing research results, and are applying these results in the care they provide. Unfortunately, there is more current research on this topic, conducted locally, which provides differing results. The nurses knowledge of these results, or their ability to apply them to current nursing care is limited for a variety of postulated reasons. New methods of disseminating and encouraging the application of nursing research findings are needed.

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Appendix A

Invitation to Participate

You are invited to participate in a study examining the perceived information needs of post-myocardial infarction patients. This study is being conducted by a graduate student in the Master of Nursing degree program at the University of Manitoba. The intent of the study is to determine which information nurses believe will be most helpful to post-MI patients in their early convalescent period. You have been invited to participate because you are presently involved in post-MI patient education in your workplace.

If you agree to participate in this study, it will involve completing a brief self-administered questionnaire followed by a card sorting procedure. The cards will contain information statements that you may have read or taught to patients from the Heart Attack Book. You will be given clear directions to sort these cards into piles that represent their helpfulness to the post-MI patient (eg: least helpful statements to most helpful statements). Approximately one hour of your time will be required. This procedure may take place at a time and place that is convenient to you.

You are under no obligation to participate in this study. While there is no direct benefit for your personal participation in the study, the information obtained will assist nurses to improve their patient education skills. If you choose not to participate, it will not affect your present or future employment in any way. You are free to withdraw from the study at any time. The information you provide will be identified by a number, known only to the researcher. The data will be stored in a locked filing cabinet. The only persons with access to this information will be the graduate student and the three members of the thesis advisory committee. The data will be retained for seven years, after which it will be destroyed.

The results of the study may be published in a journal article. The results will be reported in such a way that particular persons cannot be identified. You may receive a copy of the results if you desire.

If you agree to take part, please read and sign the permission form. If you have any questions, please feel free to call me at _____ (home telephone number).

Graduate Student:

Trudy M. Nernberg

Thesis Committee:

Chairperson: Dr. B. Naimark (away)

Internal Member: Dr. D. Clark ()

External Member: Dr. J. Welsh

Appendix B

Permission Form

By completing the information on this form, you are agreeing to have the researcher, Trudy Nernberg, contact you in your home within the next week.

Name: _____

Address: _____

Home telephone: _____

What are some times that would be convenient for
me to call you at this number? _____

Would you like a copy of the results of the study?

Yes _____

No _____

Appendix C

Consent

I, _____, agree to participate in a study of the perceived information needs of post-myocardial infarction patients. I have received both written and verbal explanation of the study by the researcher, Trudy Nernberg, who is a graduate student in the Masters' of Nursing program at the University of Manitoba. Any questions I have had have been answered to my satisfaction. The study has been approved by the Faculty of Nursing Ethical Review Committee.

I understand that I will be asked to complete a brief questionnaire, and to complete a card sort. Approximately one hour of my time will be required. Information collected from the questionnaire and card sort will be held in confidence, and will be kept in a locked filing cabinet. Only the researcher, Trudy Nernberg and three professors (members of the advisory committee) will have access to this information. Seven years following the completion of the study, this information will be destroyed.

I understand that my decision to participate is voluntary, and that I may withdraw from the study at any time. I understand that my participation in this study will in no way affect my present or future employment.

I also understand that the results of the study may be published in a journal article. The results will be reported in such a way that particular persons cannot be identified. In addition, I may receive a copy of the results if I desire.

My signature indicates that I am informed and that I agree to participate voluntarily.

Date

Signature of Respondent

Signature of Researcher

Appendix D

Letter Requesting Access to Institution

Dear _____ :

I am conducting a nursing research study as a requirement of my Master of Nursing degree at the University of Manitoba. The purpose of the study is to determine the perceptions of nurses related to the educational needs of post-myocardial infarction patients. The intent of the study is to consolidate in-hospital teaching according to patients' most immediate needs. I have enclosed a copy of the proposal for your review.

I am requesting access to your institution in order to conduct this study. Although data will be collected in nurses' homes, the recruitment of subjects will be required while they are at work, in the hospital. The recruitment procedure is outlined on pages of the proposal. Selection criteria will include nurses who: (a) are active practicing Registered Nurses; (b) have a minimum of one year's experience in educating post-MI patients in a program utilizing the Heart Attack Book; (c) are able to read and speak English and (d) indicate a willingness to participate.

Participation in the study is voluntary and subjects may withdraw from the study at any time. The participants will be unaffected by any decision not to participate, or to withdraw once participating. All information collected in this study will be numerically coded so that individuals cannot be identified. The study results will be summarized and presented in a manner such that no one can be identified.

This study has been approved by the Faculty of Nursing Ethical Review Committee of the University of Manitoba. My thesis advisor is away on sabbatical; the thesis committee Internal Member, Dr. Diana Clark is available to answer any questions you may have. She can be reached at _____ I look forward to hearing your response. If you have any questions or concerns, I can be contacted at _____ (home).

Sincerely yours,

Trudy Nernberg R.N., B.N. Graduate Student
Master of Nursing program University of Manitoba

Appendix E

Demographic Information Form

These are some questions that will help me in analyzing the results of this study. Your answers will be kept confidential and your name will not appear on this form.

1. What is your age at the date of this interview?

_____ years

2. What is your marital status? (Check one only.)

- ☐ Single (never married)
- ☐ Married or common-law
- ☐ Separated
- ☐ Divorced
- ☐ Widowed

3. Gender: ☐ Female ☐ Male

4. How many years (total) have you been an Active Practicing Registered Nurse?

5. How long have you been engaged in the teaching of post-MI patients?

6. Are you employed on a full-time (F/T) or part-time (P/T) basis? (check one)

☐ F/T ☐ P/T

7. What is the highest level of educational preparation you have attained?

(Check one only.)

- ☐ R.N. (diploma)
- ☐ R.N. with certificate (eg.: ICU course)
- ☐ B.N.
- ☐ B.N. with certificate (eg.: ICU course)
- ☐ M.N.

Appendix F

Instructions for Card Sort for Study Participants

I will give you a set of cards that have statements written on each card. The statements are about things that individuals who have had a myocardial infarction (MI) are taught to help them recover from the MI. There are no right or wrong answers. I am interested in knowing, based on your experience, how helpful you think these things will be to patients in the early convalescent period after their MI.

I will ask you to sort these cards from the most helpful to the least helpful. You will only be able to place a certain number of cards in each pile. I will give you directions as we proceed so that the task will be clear. Do you have any questions before we start?

1. Read each card, ask yourself How helpful would it be for post-MI patients to learn the information written on the cards.
2. Using your initial "gut" reaction to the card, decide if the statement on the card would be helpful or not helpful. This means that you will divide this pile of cards into two piles. There may be some cards that you are undecided about. Place these cards in a third pile in the middle. Try to place only 10 cards at the most in this middle pile.
3. Look through the pile of cards you consider to have the most helpful statements. Select the 5 most helpful statements of all of those cards and place these in pile #1.
4. Now look through the cards remaining in the helpful pile, pick out the next 7 most helpful statements. Place these cards in pile #2.
5. Now look through the remaining cards in the helpful pile and select the next 13 with the most helpful statements. Place these cards in pile #3.
6. Now pick up the pile of cards that you thought was not helpful. Select the 5 least helpful statements of all of these and place them in pile #7.
7. Look through the cards remaining in the not helpful pile and select the 7 cards that are the next least helpful statements. Place these cards in pile #6.

8. Now look through the remaining cards in the not helpful pile, and pick out the next 13 not helpful cards. Place these cards in pile #5.

9. Now pick up the remaining cards. These are the statements that you feel undecided or neutral about. Place these cards in pile #4.

10. Now examine all the piles to see if there are any changes you would like to make.

11. Is there information that you think would be important for patients to know that was not included in these cards? If so, write down this information using your own words. Place this card in the appropriate pile of helpfulness.

(Provide the participants five minutes to rest before proceeding to collect the demographic information.)

Adapted from deLeon-Demaré et al., 1992

APPENDIX G

HAB Q-SORT CONTENTS

CARD NO.	HAB TEACHING ITEM
1.	How the heart works
2.	What a heart attack is.
3.	What causes chest pain.
4.	How the heart heals after a heart attack.
5.	What the differences between a heart attack and angina are.
6.	What other tests my doctor may order in the weeks to come.
7.	That smoking increases the risk of a heart attack.
8.	How to stop smoking.
9.	Where I can go to learn to stop smoking.
10.	That smoking damages the heart and if I quit smoking some of this damage may go away.
11.	That high blood cholesterol increases the risk of a heart attack.
12.	What I can do to lower my high blood cholesterol level.
13.	My blood cholesterol level.
14.	That high blood pressure increases the risk of a heart attack
15.	What I can do to control my blood pressure.
16.	That alcohol can increase my blood pressure.
17.	How I can tell if my blood pressure is high.
18.	How salt intake affects my blood pressure.
19.	That stress increases the risk of a heart attack.
20.	How to manage my stress.
21.	It is normal to feel fear, anger, or sadness after a heart attack.
22.	How to share my feelings if I am afraid, angry or sad.
23.	What will happen if I stop taking my medications.
24.	Why each medication is taken.
25.	The side effects to expect from my medications.
26.	The side effects of medications to report to my doctor.
27.	What to do if I forget to take my medication(s).
28.	How to take my medications.
29.	My local pharmacist can answer my questions about my medications.
30.	That alcohol can change how my medications work.
31.	That being overweight increases the risk of a heart attack.
32.	Tips to reach my goal weight.
33.	The foods I need to cut back on in my diet.
34.	The foods I need to include in my diet.
35.	Healthy ways to cook.
36.	Healthy ways to eat out.
37.	How to read ingredient labels on foods.
38.	That lack of exercise increases the risk of a heart attack.

39. How to start an exercise program.
40. Tips to manage my activities when the weather is hot or cold.
41. The necessity for warm ups and cool downs when exercising.
42. How I should feel when I exercise.
43. How to count my pulse.
44. My personal maximum pulse rate when exercising.
45. Tips to manage a regular walking program.
46. Tips to conserve my energy during activities.
47. When I can go back to my household activities.
48. When I can drive.
49. When I can go back to my recreational activities.
50. When I can go back to work.
51. When I can have sex.
52. What symptoms I should call my doctor for.
53. What the signals of a heart attack are.
54. What actions I should take if signals of a heart attack occur.
55. When an ambulance should be called.
56. When I should take "nitro".
57. How I should take "nitro".
58. That "nitro" are not habit forming.
59. How to store my "nitro".
60. (blank card)

APPENDIX H

HAB CATEGORY ITEM CONTENTS

ANATOMY & PHYSIOLOGY

1. How the heart works
2. What a heart attack is.
3. What causes chest pain.
4. How the heart heals after a heart attack.
5. What the differences between a heart attack and angina are.
6. What other tests my doctor may order in the weeks to come.

RISK FACTORS

7. That smoking increases the risk of a heart attack.
8. How to stop smoking.
9. Where I can go to learn to stop smoking.
10. That smoking damages the heart and if I quit smoking some of this damage may go away.
11. That high blood cholesterol increases the risk of a heart attack.
12. What I can do to lower my high blood cholesterol level.
13. My blood cholesterol level.
14. That high blood pressure increases the risk of a heart attack
15. What I can do to control my blood pressure.
16. That alcohol can increase my blood pressure.
17. How I can tell if my blood pressure is high.
18. How salt intake affects my blood pressure.
19. That stress increases the risk of a heart attack.
20. How to manage my stress.

PSYCHOSOCIAL ASPECTS

21. It is normal to feel fear, anger, or sadness after a heart attack.
22. How to share my feelings if I am afraid, angry or sad.

MEDICATIONS

23. What will happen if I stop taking my medications.
24. Why each medication is taken.
25. The side effects to expect from my medications.
26. The side effects of medications to report to my doctor.
27. What to do if I forget to take my medication(s).
28. How to take my medications.
29. My local pharmacist can answer my questions about my medications.
30. That alcohol can change how my medications work.
58. That "nitro" are not habit forming.
59. How to store my "nitro".

DIET

- 31. That being overweight increases the risk of a heart attack.
- 32. Tips to reach my goal weight.
- 33. The foods I need to cut back on in my diet.
- 34. The foods I need to include in my diet.
- 35. Healthy ways to cook.
- 36. Healthy ways to eat out.
- 37. How to read ingredient labels on foods.

ACTIVITY

- 38. That lack of exercise increases the risk of a heart attack.
- 39. How to start an exercise program.
- 40. Tips to manage my activities when the weather is hot or cold.
- 41. The necessity for warm ups and cool downs when exercising.
- 42. How I should feel when I exercise.
- 43. How to count my pulse.
- 44. My personal maximum pulse rate when exercising.
- 45. Tips to manage a regular walking program.
- 46. Tips to conserve my energy during activities.
- 47. When I can go back to my household activities.
- 48. When I can drive.
- 49. When I can go back to my recreational activities.
- 50. When I can go back to work.
- 51. When I can have sex.

ACTIONS FOR SURVIVAL

- 52. What symptoms I should call my doctor for.
- 53. What the signals of a heart attack are.
- 54. What actions I should take if signals of a heart attack occur.
- 55. When an ambulance should be called.
- 56. When I should take "nitro".
- 57. How I should take "nitro".

APPENDIX I

POST MI TEACHING RECORD

DATE	<u>ASSESSMENT OF READINESS TO LEARN</u> <u>INFLUENCING FACTORS</u> Barriers Enhancers Patient's perceived learning needs	DATE	<u>PLANNING</u> Patient receives "Heart Talk" <input type="checkbox"/> CCTV Programming <input type="checkbox"/> Referral to: (✓) Physiotherapy <input type="checkbox"/> Dietary <input type="checkbox"/> Pharmacy <input type="checkbox"/> <u>PROCEDURE PREPARATION:</u> Angioplasty <input type="checkbox"/> pamphlet <input type="checkbox"/> video Angiogram <input type="checkbox"/> pamphlet <input type="checkbox"/> video			
KEY: *U* ...Understood *R* ...Review, Repeat, Re-demonstrate, Remind *See Progress Note		DATE TAUGHT	LEARNING ASSESSMENT Key Initial Patient Behaviors			COMPLETED Date/Initial
LEARNING BEHAVIORS - THE PATIENT...						
<u>OXYGENATION</u> 1 States how the heart works 2 States what happens with a heart attack 3 States other terms for "heart attack "						
4 States differences between angina and heart attack 5 States behaviors associated with angina 6 States factors precipitating angina 7 States steps to follow when experiencing angina in hospital, at home. 8 States behaviors associated with heart attack						
9 Discusses own risk factors a) smoking b) high level of blood cholesterol c) being overweight d) having high blood pressure e) stress f) lack of exercise 10 States behaviors associated with most common complications						

KEY: "U" ...Understood "R" ...Review, Repeat, Re-demonstrate, Remind *See Progress Note	DATE TAUGHT	LEARNING ASSESSMENT Key Initial Patient Behavior			COMPLETED Date/Initial
B. SELF CONCEPT AND ROLE FUNCTION 1. States what to expect (in hospital and home) regarding: a) emotional responses (denial, loss, fear, anger, depression). b) medical follow-up. c) actions for survival. d) available community resources.					
C. MEDICATIONS 1. Describes importance of: a) taking medication exactly as ordered. b) taking only own medications. c) carrying ID card listing diagnosis, medications. d) providing community pharmacist a list of medications. 2. States or demonstrates knowledge of personal medications including: a) name. b) purpose. c) when and how to take. d) potential side effects. e) storage. f) how to obtain. g) what to do if dose missed. h) name and phone number to contact with questions post-discharge. i) correct use of schedule cards.					
D. ACTIVITY AND REST 1. Discusses personal activity limitations a) states symptomatic limitations. b) demonstrates taking heart rate. c) met level 2. Discusses and describes activity progression including: a) gradual resumption and spreading activity throughout the day b) activities at home c) activities to be avoided d) home exercise program 3. States guidelines for sexual activity 4. Describes personal plan for recognition and management of stress					
E. NUTRITION 1. States knowledge related to reduction of total fat including: a) definitions b) actions to modify fats to monounsaturated and polyunsaturated 2. Describes rationale for sodium restriction and a) foods to avoid b) use of herbs and spices 3. Discusses personal plan for achieving/ maintaining ideal body weight					
NAME	STATUS	INITIAL	NAME	STATUS	INITIAL